correctional services
Department:
Correctional Services
REPUBLIC OF SOUTH AFRICA

Private Bag X136, Pretoria, 0001 or 124 Church Street, Poyntons Building West Block, Pretoria, 0001
Tel (012) 305 8483, Fax (012) 323 5621, E-mail: lina.makgaila@dcs.gov.za

Ref : 6/1/3/4
Enq : RL Makgaila

The Manager
.....
.....
.....
.....

BID HO 3/2025: APPOINTMENT OF A PANEL OF SERVICE PROVIDER'S TO SUPPLY AND DELIVERY OF STEEL TYPES TO ALL REGIONS WITHIN THE DEPARTMENT OF CORRECTIONAL SERVICES FOR A PERIOD OF THREE YEARS.

The Department of Correctional Services requires the item(s)/service described per attached bid invitation.

You are requested to complete the documents and to submit it to the address indicated in the SBD 1.

Non compulsory virtual briefing session will be held on 12 May 2025 at 10:00

Microsoft Teams meeting ID:

Meeting ID: 324 078 900 708 3
Passcode: 2RQ2jB67

Please note the link will be made available on eTender and DCS portal.

Bidders must take note of the following:

- The closing date of the bid will be at **11h00 am** on 21 May 2025 and will be valid for a period of **hundred and twenty (120) days** after the closing date.
- Bid must be submitted in one sealed envelope. The name and address of the bidder, the bid number and closing date indicated on the envelope. The envelope must not contain documents relating to any other bid.
- It is the responsibility of bidders to ensure that bid reach the address indicated on the SBD 1 before the closing date and time. **No late bid will be accepted.**

Amendment 1 of 2009

BID HO 3/2025: APPOINTMENT OF A PANEL OF SERVICE PROVIDER'S TO SUPPLY AND DELIVERY OF STEEL TYPES TO ALL REGIONS WITHIN THE DEPARTMENT OF CORRECTIONAL SERVICES FOR A PERIOD OF THREE YEARS.

- Bidders need to acquaint themselves with the contents of the attached General and Special conditions of Contract.
- It is the responsibility of bidder to ensure that they are registered on the National Treasury Central Supplier Database (CSD).
- It will be expected of the successful bidder to sign a formal contract at this office after being notified of the acceptance of their bid.

.....

For National Commissioner: Correctional Services
Director: Procurement
D.B. Molaba

Date: 2025/04/29

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BID HO 3/2025: APPOINTMENT OF A PANEL OF SERVICE PROVIDER'S TO SUPPLY AND DELIVERY OF STEEL TYPES TO ALL REGIONS WITHIN THE DEPARTMENT OF CORRECTIONAL SERVICES FOR A PERIOD OF THREE YEARS.

correctional services
Department:
Correctional Services
REPUBLIC OF SOUTH AFRICA

SBD1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE *(NAME OF DEPARTMENT/ PUBLIC ENTITY)*					
BID NUMBER:	**HO 03/2025**	CLOSING DATE:	**21 MAY 2025**	CLOSING TIME:	**11:00 AM**
DESCRIPTION	**BID HO 3/2025: APPOINTMENT OF A PANEL OF SERVICE PROVIDER'S TO SUPPLY AND DELIVERY OF STEEL TYPES TO ALL REGIONS WITHIN THE DEPARTMENT OF CORRECTIONAL SERVICES FOR A PERIOD OF THREE YEARS.**				

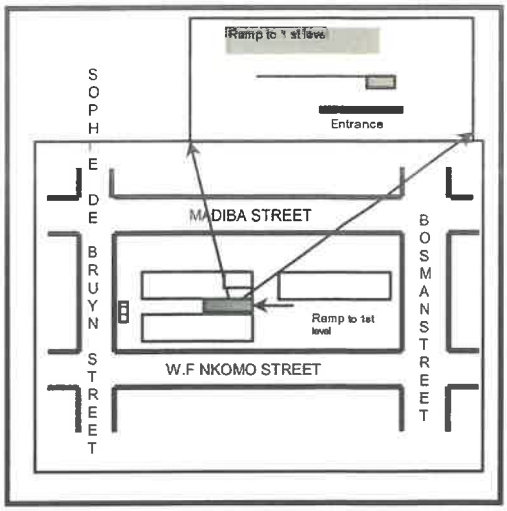
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS)*

BID RESPONSE DOCUMENTS MAY BE POSTED TO:

THE NATIONAL COMMISSIONER
DEPARTMENT OF CORRECTIONAL SERVICES
PRIVATE BAG X136
PRETORIA
0001

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT:

POYNTONS-BUILDING
WEST BLOCK
124 W.F. NKOMO STREET (C/O SOPHIE DE BRUYN AND W.F. NKOMO STREET)
PRETORIA
0002



BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT/ PUBLIC ENTITY	Correctional Services	CONTACT PERSON	Mr. Kopano Ntsoane
CONTACT PERSON	Lina Makgaila	TELEPHONE NUMBER	Tel: 012 305 8274
TELEPHONE NUMBER	012 305 8483	FACSIMILE NUMBER	N/A
FACSIMILE NUMBER	N/A	E-MAIL ADDRESS	Kopano.ntsoane@dcs.gov.za
E-MAIL ADDRESS	Lina.makgaila@dcs.gov.za		

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	[Tick applicable box] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	[Tick applicable box] ☐ Yes ☐ No	

Amended 2017

SBD1

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/SWORN AFFIDAVIT(FOR EMEs& QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]			
ARE YOU THE ACCREDITED REPRESENTATIVE **IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES ANSWER PART QUESTIONNAIRE BELOW]

QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS	
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW. IF THE ANSWER

PART B
TERMS AND CONDITIONS FOR BIDDING

TERMS AND CONDITIONS FOR BIDDING

1.	**BID SUBMISSION:**
1.1.	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2.	ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.
1.3.	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4.	THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).
2.	**TAX COMPLIANCE REQUIREMENTS**
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3	APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6	WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7	NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:.....

CAPACITY UNDER WHICH THIS BID IS SIGNED:.....
(Proof of authority must be submitted e.g. company resolution)

DATE:

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest1 in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship

1 the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium2 will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring

2 Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....	.....
Signature	Date
.....	.....
Position	Name of bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

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1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 **PREFERENCE POINT SYSTEM**

a) The applicable preference point system for this tender is the 90/10 preference point system.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.4 **To be completed by the organ of state:**

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. **POINTS AWARDED FOR PRICE**

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \text{ or } \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps	=	Points scored for price of tender under consideration
Pt	=	Price of tender under consideration
Pmax	=	Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 preference point system is applicable, corresponding points must also be indicated as such.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)
Women	3	
Youth	3	
Black	2	
People living with disabilities	2	
	10	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number: .....

4.5. TYPE OF COMPANY/ FIRM

Partnership/Joint Venture / Consortium
One-person business/sole propriety
Close corporation
Public Company
Personal Liability Company
(Pty) Limited
Non-Profit Company
State Owned Company
[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any

of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution, if deemed necessary.

.....

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....

DATE: .....

ADDRESS: .....

.....

.....

.....

Proof of Authority- Company Resolution
[Insert company letterhead]

Date:

[Insert company address]

RE: Authorised signatory for Department of Correctional Services (DCS)

This is to inform that we have authorised the below mentioned person to sign on behalf of [name of company] for all matters related to this bid.

Authorised signatory to sign for the DCS Steel bid:

Name and Surname	Designation	Identity Number	Signature

Yours Faithfully

_____
XXXXXXXXXX

GOVERNMENT PROCUREMENT

GENERAL CONDITIONS OF CONTRACT

NOTES

The purpose of this document is to:

(i) Draw special attention to certain general conditions applicable to government bids, contracts and orders; and

(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business with government.

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and neuter.

- The General Conditions of Contract will form part of all bid documents and may not be amended.

- Special Conditions of Contract (SCC) relevant to a specific bid, should be compiled separately for every bid (if applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions in the SCC shall prevail.

TABLE OF CLAUSES

General Conditions of Contract

1. Definitions

1. The following terms shall be interpreted as indicated:

1.1 "Closing time" means the date and hour specified in the bid documents for the receipt of bids.

1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 "Country of origin" means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 "Day" means calendar day.

1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.

1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.

1.10 "Delivery into consignees store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 "Force majeure" means an event beyond the control of the supplier and not involving the supplier's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or

revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 "GCC" means the General Conditions of Contract.

1.15 "Goods" means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 "Imported content" means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17 "Local content" means that portion of the bid price which is not included in the imported content provided that local manufacture does take place.

1.18 "Manufacture" means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 "Order" means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 "Project site," where applicable, means the place indicated in bid documents.

1.21 "Purchaser" means the organization purchasing the goods.

1.22 "Republic" means the Republic of South Africa.

1.23 "SCC" means the Special Conditions of Contract.

1.24 "Services" means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 "Written" or "in writing" means handwritten in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bid documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bid documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bid documents and specifications.

5. Use of contract documents and information; inspection.

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design

rights arising from use of the goods or any part thereof by the purchaser.

7. Performance security

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bid documents or another form acceptable to the purchaser; or
(b) a cashier's or certified cheque

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

8. Inspections, tests and analyses

8.1 All pre-bid testing will be for the account of the bidder.

8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

8.3 If there are no inspection requirements indicated in the bid documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract.
Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidental

13.1 The supplier may be required to provide any or all of the

services

following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;
(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;
(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and
(b) in the event of termination of production of the spare parts:
(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been

delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract amendments

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.

21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the Supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding ten (10) years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer/ Authority will, at the discretion of the Accounting Officer/ Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Officer/Authority actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information :

(a) the name and address of the supplier and/or person restricted by the purchaser;
(b) the date of commencement of the restriction'
(c) the period of restriction; and
(d) the reasons for the restriction.

These details will be loaded in the National Treasury's central data base of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities, Act No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury Website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
(b) the purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and
(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice

Amendment 1 of 2010

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

34. Prohibition of Restrictive Practices

34.1 In terms of Section 4(1)b)(iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) was/were in collusive bid (or bid rigging).

34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has/have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998.

34.3 If a bidder(s) or contractor(s), has/have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and/or terminate the contract in whole or part, and/or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and/or claim damages from the bidder(s) or contractor(s) concerned.

PART2

SPECIAL CONDITIONS OF CONTRACT

BID NO: HO3/2025

APPOINTMENT OF A PANEL OF SERVICE PROVIDER'S TO SUPPLY AND DELIVERY OF VARIOUS STEEL TYPES

TO ALL REGIONS WITHIN THE DEPARTMENT OF CORRECTIONAL SERVICES FOR

A PERIOD OF THREE (3) YEARS

BID VALIDITY PERIOD: 120 DAYS

BID ADVERT DATE: 30 APRIL 2025

CLOSING DATE: 21 MAY 2025 AND TIME OF BID: AT 11H00 AM

NON-COMPULSORY ONLINE BRIEFING SESSION:
(Bidders are encouraged to attend for clarity purposes)

MICROSOFT TEAMS: 12 MAY 2025 AT 10H00 AM
(See detail under part 2, par 7.1)

Join the meeting now

Meeting ID: 324 078 900 708 3

Passcode: 2RQ2jB67

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LIST OF ABBREVIATIONS

BAC	Bid Adjudication Committee
B-BBEE	Broad-Based Black Economic Empowerment
BEC	Bid Evaluation Committee
CPA	Contract Price Adjustment
CPI	Consumer Price Index
CSD	Central Supplier Database
EME	Exempt Micro Enterprises
HDI	Historically Disadvantaged Individual
ISO	International Organization for Standardization
NT	National Treasury
PPI	Producer Price Index
PPPFA	Preferential Procurement Policy Framework Act
PPR 2022	Preferential Procurement Regulations 2022
QC	Quality Control
QSE	Qualifying Small Enterprise
RSA	Republic South Africa
SANAS	South African National Accreditation System
SANS	South African National Standards
SABS	South African Bureau of Standards
DTIC	Department of Trade, Industry and Competition
SARS	South African Revenue Service
SBD	Standard Bidding Document

SCC	Special Conditions of Contract
GCC	General Condition of Contract
RFQ	Request for Quotation
DCS	Department of Correctional Services
TCC	Tax Clearance Certificate (Pin)
VAT	Value-Added Tax

IMPORTANT DEFINITIONS

Delivery	The process of transporting goods from a bidder's source location to a predefined destination by the participants.
Due diligence	The investigation or exercise of care that the State conducts before entering into an agreement with the bidders to validate the bid responses.
Item	Means steel item as indicated in table 3 of this document and as listed in the pricing schedule SBD 3.1.
Mandatory	A mandatory document in terms of the bid is a document that is required, obligatory, or compulsory. **Non-submission means no further evaluation of the bidder.**
Original Ink	Tender forms must be legible and ink must be used. Tender forms completed mechanically, e.g. by means of a typewriter/computer are deemed to have been completed in **original ink**. A signature/initial must be made by hand in black ink. Bidders must not use pencil to complete or sign the bid document as this will lead to a disqualification.
Service Provider	Means any individual or entity that is contracted by the Department of Correctional Services to render goods or services.
Specific Goals	Means specific goals as contemplated in section 2 (1) (d) of the Preferential Procurement Policy Framework Act, 2000.
Per item	Means various steel types listed under every **Item** as listed in the pricing schedule SBD 3.1

LIST OF ANNEXURES

Annexure A: Pricing Schedule SBD 3.1 for Six (6) Regions

Annexure B: BD 27 Confirmation of supply arrangements between bidder and his supplier

Annexure C: SANS Technical Specifications

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LIST OF ITEMS (VARIOUS STEEL TYPES)

ITEM 1: Supply, delivery and off-loading of hollow metal sections-hot rolled **(SANS 657-4:2004)**

ITEM 2: Supply, delivery and off-loading of stainless-steel sheets grade 304 **(A240/A240M-14)**

ITEM 3: Supply, delivery and off-loading of galvanized iron sheets, black iron sheets, black mild steel sheets and mild steel bars **(SANS 50025-1:2009)**

ITEM 4: Supply, delivery and off-loading of angle mild steel bars, round bright bars, round bright steel bars, expanded metals and channel irons **(SANS 657-4:2004)**

SECTION A - INTRODUCTION AND BID REQUIREMENTS

1. INTRODUCTION

1.1 The purpose of this tender is to invite prospective panel of service providers to submit proposals for the supply, delivery and off-loading of various Steel types for a period of three (3) years to ALL Regions (Provinces) of the Department of Correctional Services (DCS).

1.2 The aim is to secure a panel of service providers as and when required, on long-term contracts for the 6 regions.

1.3 The six (6) regions where bidders will be providing various steel types are as follows:

(a) Eastern Cape (EC)
(b) Free State and Northern Cape (FS-NC)
(c) Gauteng (GP)
(d) Kwa-Zulu Natal (KZN)
(e) Limpopo, Mpumalanga and North West (LMN)
(f) Western Cape (WC)

1.4 DCS Regions and Management Areas/Workshops

No	Region	Management Areas/Production Workshops
1	EASTERN CAPE (EC)	ST ALBANS
2	FREE STATE AND NORTHERN CAPE (FS-NC)	BIZZAH MAKHATE (KROONSTAD)
3	GAUTENG (GP)	BOKSBURG
		KGOSI MAMPURU II
		LEEUWKOP
		ZONDERWATER
4	KWA-ZULU NATAL (KZN)	PIETERMARITZBURG
5	LIMPOPO, MPUMALANGA AND NORTH WEST (LMN)	THOHOYANDOU
6	WESTERN CAPE (WC)	DRAKENSTEIN
		POLLSMOOR

2. LEGISLATIVE AND REGULATORY FRAMEWORK

2.1 This bid and all contracts emanating thereof will be subject to the **General Conditions of Contract** issued in accordance with Treasury Regulation 16A published in terms of the Public Finance Management Act, 1999 (Act 1 of 1999) as well as the Preferential Procurement Policy Framework Act 2000 (PPPFA) with its latest 2022 Regulations.

2.2 **The Special Conditions of Contract** are supplementary to those of the General Conditions of Contract. Where, however, the Special Conditions of Contract conflict with the General Conditions of Contract, the Special Conditions of Contract shall prevail. These conditions form part of the bid and bidders need to familiarize themselves with the contents thereof.

2.3 The Public Administration Act, 2014 (Act No 11 of 2014), chapter 3, section 8(2)(a) specifies that an employee of the public service officials may not conduct business with the Government.

2.4 Section 118 of the Correctional Services Act, 1998 (Act No 111 of 1998) dictates that no correctional official may directly or indirectly sell, supply or derive any benefit or advantage from the sale or supply of any article to or for the use of any prisoner or prison, or have any interest in any contract or agreement for the sale or supply of any such articles. This refers to the receiving of any money, gifts, discount, advantage, or any other benefit/gratification by an official of the Department. Indirectly this refers to the receiving of any money, gifts, discount, advantage, or any other benefit/ gratification by the direct family (spouse, life partner, child, stepchild, adopted child, parents and parents of spouse/ life partner, grand child or siblings of official/spouse/life partner).

2.5 Bidders having a relationship with persons employed by the DCS must declare their interest on SBD 4 (Bidders' disclosure).

2.6 Other applicable legislation includes, but is not limited to, the National Health Act, 2003 (Act No 61 of 2003); Health and Safety Act, Act no 85 of 1993 – Facilities Regulations, Act no 54 of 1972; and the National Department of Correctional Services Infection Prevention and Control Policy: September 2015.

2.7 **National Standards** - The product/s offered must comply with all laws and regulations as amended that are applicable to the supply contract e.g. SABS.

2.8 **Standard Bidding Documents (SBD)**

Bidders are required to submit and adhere to all SBD requirements of this bid. Bid documents should not be retyped or redrafted.

2.9 **Tax Compliance Requirements**

In line with National Treasury instruction note 9 of 2017/2018, it is a condition of this bid that the tax matters of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Services (SARS) to meet the bidder's tax obligations.

It is a requirement that bidders grant a written approval when submitting this bid that SARS may on an on-going basis during the tenure of the contract disclose the bidder's tax compliance status and by submitting the bid such approval is deemed to have been granted.

The bidder must be registered on the Central Supplier Database (CSD) and provide CSD number and TCS Pin as per SBD 1.

When a Consortium/ Joint Venture/ Sub-contractors is involved, each party must be registered on the Central Suppliers Database and their tax compliance status will be verified through the Central Suppliers Database.

No bid will be awarded to a bidder who is non-tax compliant.

2.10 **Registration on the Central Supplier Database**

Bidders need to register on the National Treasury Central Supplier Database in order to do business with the state. Accounting Officers cannot award any bid or price quotations to any supplier who is not registered on the Central Suppliers Database. Bidders must log on www.csd.gov.za for self-registration.

Bidders must be registered on CSD prior to submitting their bids; failure to register prior to submitting the bid will invalidate the bid.

The latest full CSD report, not a summarized version should be submitted.

2.11 **Certification of documents by a Commissioner of Oath**

Bidders must ensure that all copies of documents that require certification in terms of this bid comply with legislative requirements governing the administering of an oath affirmation. The Commissioner of Oath must append a signature, date and also print out name. Copies that do not comply with legislative requirements will be regarded as invalid.

The date of certification should not be older than six (6) months as at the closing date and time of the bid.

Non-compliance with or non-adherence to any of the legislative requirements stipulated above may render the applicable section in the bid proposal invalid.

3. JOINT VENTURES, CONSORTIUMS AND TRUSTS

Should a bidder choose to enter into a joint venture and/or consortium arrangement, bidders must submit concrete proof of the existence of such joint ventures and/or consortium arrangements. Details of partnerships and joint ventures must be provided as part of the bid proposal, if applicable. Relevant documentation relating to the above-mentioned must be included in the tender proposal.

DCS will accept signed agreements as acceptable proof of the existence of a joint venture and/or consortium arrangement. Such agreement must be made available to DCS with the bid proposal.

The joint venture and/or consortium agreements must clearly set out the roles and responsibilities of the Lead Partner and the joint venture and/or consortium party. The agreement must also clearly identify the Lead Partner, with the power of attorney to bind the other party/parties in respect of matters pertaining to the joint venture and/or consortium arrangement.

4. FRONTING

4.1 The DCS, in ensuring that bidders conduct themselves in an honest manner will as part of the bid evaluation process, conduct or initiate the necessary enquiries, investigations to determine the accuracy of the representations made in the bid documents.

4.2 Should any of the fronting indicators as contained in the Guidelines on the Complex Structures and Transactions and Fronting, issued by the Department of Trade and Industry, be established during such enquiry/investigation, the onus will be on the bidder/contractor to prove that fronting does not exist. Failure to do so within a period of 14 days from the date of notification may invalidate the bid/contract and may also result in the restriction of the bidder/contractor to conduct business with the public sector for a period not exceeding ten (10) years, in addition to any other remedies DCS may have against the bidder/contractor concerned.

5. CONTRACT PERIOD

5.1 The contract period shall be for a period of three (3) years from the date of signing the contract.

6. SECURITY COMPLIANCE

6.1 The contractor will be required to adhere to the security compliance requirements of DCS.

6.2 The successful Bidder shall ensure compliance with the DCS security procedures (identification, access control, searching, and prohibition of unauthorized items).

6.3 The successful Bidder agrees that all the staff shall adhere to and be subjected to the security regulations applicable to each Correctional Centre.

7. NON-COMPULSORY BRIEFING SESSION

7.1 There will be a non-compulsory briefing session through teams (visual) to provide clarity.

8. SUBMISSION OF BIDS

8.1 All returnable documents should be submitted with the bid at the closing date and time of the bid in an original /hard copy (clearly marked) to below address.

124 WF Nkomo Street
Poyntons Building
Pretoria
0001

8.2 **Bidders should print and initial each page of the special conditions of the bid and return it together with all documents**. Bidders shall check the numbers of the pages and satisfy themselves that none are missing or duplicated in line with the index provided. No liability shall be accepted with regard to claims arising from the fact that pages are missing or duplicated.

8.3 The bid should be submitted as follows:

8.3.1 One (1) original hard copy and fully completed pricing schedule supported **USB**.

8.3.2 In addition, bidders should provide the pricing schedule **as per Annexure A**

8.4 In order to simplify the evaluation process, bidders are required to neatly subdivide their bid documents and submit in the following manner:

8.4.1 A bid should be submitted in a sealed envelope or sealed suitable cover on which the name and address of the bidder, the bid number and the closing date should be clearly visible.

9 LATE BIDS

9.1 Bids received after the closing date and time, at the address indicated in the bid documents will **NOT** be accepted for consideration and where practicable, be returned unopened to the bidder.

10 COMMUNICATION

10.1 All bid-related and technical enquiries should be addressed to the email address mentioned in paragraph 11 below. No verbal or direct communication with any DCS officials will be allowed during the running period of the bid.

10.2 If a bidder finds or reasonably believes they have found any discrepancy, ambiguity, error or matters, the bidder must promptly notify DCS in writing of such discrepancy, ambiguity, error or inconsistency in this bid or any other information provided by DCS (other than minor administrative errors) in order to afford DCS an opportunity to consider what corrective action is necessary (if any).

10.3 Any actual discrepancy, ambiguity, error or inconsistency in this bid or any other information provided by the DCS will, if possible, be corrected and provided to all bidders without attribution to the bidder who provided the written notice. The corrections will be published on the same platforms where the bid was originally published.

10.4 All communication between the bidder and DCS during the bid advert period must be done in writing to the email address provided in 11.1 bid queries.

10.5 DCS may request clarification regarding information provided by bidders. Bidders are to supply the required information within the specified period, failure to do so may invalidate their bid.

11. CONTACT DETAILS

11.1 Bid enquiries:

Email address: linda.phetlhu@dcs.gov.za /kopano.ntsoane@dcs.gov.za

12. NON-COMMITMENT

12.1 DCS reserves the right to award or not to award in part or in full.
12.2 DCS reserves the right not to accept any of the bids submitted.
12.3 DCS reserves the right to withdraw or amend any of the bid conditions by notice of writing to all bidders prior closing of the bid and post award.
12.4 In the event that an incorrect award has been made, DCS reserves the right to remedy the matter in any manner it may deem fit.

13. TECHNICAL SPECIFICATIONS (VARIOUS STEEL TYPES AND ITEMS)

13.1 Selection of regions by the bidder

Bidders are encouraged to bid for more than one region as indicated below (Table 1), failure to select (√) the region'(s) and commodities may invalidate the bid.

Table 1 – DCS Regions (Provinces)

ITEMS	VARIOUS STEEL TYPES	REGIONS					
		EASTERN CAPE (EC)	FREE STATE AND NORTHERN CAPE (FS-NC)	GAUTENG (GP)	KWA-ZULU NATAL (KZN)	LIMPOPO, MPUMALANGA AND NORTH WEST (LMN)	WESTERN CAPE (WC)
1	HOLLOW ROUND, SQUARE TUBING, RECTANGULAR TUBING) METAL SECTIONS (HOT ROLLED) IN 6 METER LENGTHS IN ACCORDANCE WITH SPECIFICATIONS (SANS 657-4:2004)						
2	STAINLESS STEEL SHEETS – GRADE 304 (A240/A240M-14)						
3	FLAT GALVANIZED IRON SHEETS ACCORDING TO (SANS 50025-1:2009)						
4	MILD STEEL ANGLES, REINFORCING STEEL, BRIGHT STEEL BARS, CHANNEL IRON AND SQUARE BARS (SANS 657-4:2004)						

13.2 Bidders must be able to supply, deliver and off-load the selected items, as per **Annexure C (Specification)** to **ALL** management areas from the selected Region for a period of three (3) years.

Bidders must supply, deliver and offload all items as per management area, **Failure to bid all sub items may invalidate the bid.**

TABLE 2 – VARIOUS *STEEL TYPES LISTED BELOW AS PER ITEMS*

ITEM 1: Bidders must familiarize themselves with SANS technical specifications refer to Annexure C

SUPPLY, DELIVERY AND OFF-LOADING OF HOLLOW ROUND METAL SECTIONS-HOT ROLLED (SANS 657-4:2004)		
SUB ITEM NO.	**PRODUCT**	**DIMENSIONS**
1.	Square Tubing	Length: 6m 20mmx20mmx1.6mm
2.		Length: 6m 32mmx32mmx1.6mm
3.		Length: 6m 32mmx32mmx2mm
4.		Length: 6m 50mmx50mmx2mm
5.		Length: 6m 38mmx38mmx1.6mm
6.		Length: 6m 38mmx38mmx2mm
7.		Length: 6m 25mmx25mmx2mm
8.		Length: 6m 50mmx50mmx3mm
9.		Length: 6m 76.20mmx76.20mmx2mm
10.	Rectangular Tubing	Length: 6m 76.20mmx25.40mmx2mm
11.		Length: 6m 50mmx25.40mmx1.6mm
12.	Hollow Metal Section (Round) (Hot Rolled)	Length: 6m 19.10mm Outside diameter x1.6mm wall thickness
13.		Length: 6m 25.40mm Outside diameter x 2.0mm wall thickness
14.		Length: 6m 31.75mm Outside diameter x2.0mm wall thickness
15.		Length: 6m 38.00mm Outside diameter x 2.0mm wall thickness
16.		Length: 6m 76.20mm Outside diameter x 2mm wall thickness
17.		Length: 6m 100mm x 50mm x20mm
18.	Lip Channel	Length: 6m 150mmx50mmx20mm
19.		Length: 6m 50.80mm Outside diameter x 2.0mm wall thickness

ITEM 2: Bidders must familiarize themselves with SANS technical specifications refer to Annexure C

SUPPLY, DELIVERY AND OFF-LOADING OF STAINLESS-STEEL SHEETS GRADE 304 (A240/A240M-14)		
SUB ITEM NO.	**PRODUCT**	**DIMENSIONS**
1.	Stainless Steel Sheets	2400mmx1200mmx2mm
2.		2500mmx1200mmx6mm
3.		2500mmx1200mmx5mm
4.		2500mmx1200mmx8mm
5.		2500mmx1200mmx10mm
6.		2500mmx1250mmx0.9mm
7.		2500mmx1250mmx1.2mm
8.		2500mmx1250mmx1.6mm
9.		2500mmx1250mmx3mm

ITEM 3: Bidders must familiarize themselves with SANS technical specifications refer to Annexure C

GALVANIZED IRON SHEETS AND BLACK IRON SHEETS BLACK MILD STEEL SHEETS AND MILD STEEL BARS (SANS 50025-1:2009)		
SUB ITEM NO.	**PRODUCT**	**DIMENSIONS**
1.	Galvanized Iron Sheets	2450mmx1225mmx0.8mm
2.		2450mmx1225mmx1.2mm
3.		2450mmx1225mmx1.6mm
4.	Black Iron Sheets	2450mmx1225mmx1.2mm
5.		2450mmx1225mmx1.6mm
6.	Black Mild Steel Sheets	2450mmx1200mmx1.2mm
7.		2450mmx1200mmx1.6mm
8.		2450mmx1200mmx3mm
9.		2450mmx1200mmx5mm
10.		2450mmx1200mmx6mm
11.	Black Mild Sheets	2450mmx1200mmx8mm
12.		2450mmx1200mmx10mm
13.		2500mmx1200mmx5mm
14.		2500mmx1200mmx8mm
15.	Black Mild Steel Bars	12mmx12mmx6m
16.		25mmx6mmx6m
17.		40mmx4.5mmx6m
18.		50mmx6mmx6m

19.		50mmx8mmx6m
20.		50mmx10mmx6m
21.		50mmx12mmx6m
22.		50mmx16mmx6m

ITEM 4: Bidders must familiarize themselves with SANS technical specifications refer to Annexure C

ITEM NUMBER 4ANGLE MILD STEEL BARS, ROUND BRIGHT BARS, ROUND BRIGHT STEEL BARS, EXPANDED METALS AND CHANNEL IRONS (SANS 657-4:2004).		
SUB ITEM NO.	**PRODUCT**	**DIMENSIONS**
1.	Angle Mild Steel	Length: 6m 25mmx25mmx2.5mm
2.		Length: 6m 25mmx25mmx3mm
3.		Length: 6m 25mmx25mmx5mm
4.		Length: 6m 40mmx40mmx2.5mm
5.		Length: 6m 40mmx40mmx3mm
6.		Length: 6m 40mmx40mmx6mm
7.		Length: 6m 45mmx45mmx5mm
8.		Length: 6m 45mmx45mmx6mm
9.		Length: 6m 50mmx50mmx3mm
10.		Length: 6m 50mmx50mmx5mm
11.		Length: 6m 50mmx50mmx6mm
12.		Length: 6m 75mmx75mmx6mm
13.	Round Mild Steel Bars (Sans 1431-2007/300w)	Length: 6m 6mm
14.		Length: 6m 8mm
15.		Length: 6m 10mm
16.		Length: 6m 12mm
17.		Length: 6m 16mm
18.		Length: 6m 20mm
19.		Length: 6m 25mm
20.		Length: 6m

		32mm
21.		Length: 6m 40mm
22.	Expanded Metal in Accordance with Specification Sans 190-1:2008: Type 6320h	2400mmx1200mmx3mm
23.	Round Bright Steel Bars	Length: 6m 6mm
24.		Length: 6m 10mm
25.		Length: 6m 12mm
26.		Length: 6m 16mm
27.		Length: 6m 20mm
28.		Length: 6m 25mm
29.		Length: 6m 32mm
30.		Length: 6m 40mm
31.	Channel Iron Steel Bars	Length: 6m 100mmx50mmx6mm
32.		Length: 6m 76mmx38mmx6mm

Bidders must supply, deliver and offload all sub- items per region. The bidder should note they must supply, deliver and off-load all items under the selected Management Areas/workshop. **Failure by the bidder to commit to supply all sub-items as per pricing schedule SBD 3.1 will result in the bidder not being considered for that Management area/workshop.**

13.3 All items are supported by detailed specifications and/or South African National Standards (SANS) and or SANS Codes where applicable. Bidders must comply with these standards, codes and technical specifications throughout the contract period. Attached as **Annexure C.**

13.4 DCS reserves the right to call for product samples for visual screening should a need arise. This process will be communicated with the bidders timeously.

13.5 DCS reserves the right to subject product samples to applicable testing and evaluations, to verify compliance with the specifications.

14. COST COMPONENTS AND PROPORTIONS

14.1 The contract price usually includes the following cost components;

- Cost of finished product
- Cost of labor (handling and dispatch)

- Cost of transport and;
- Other costs, if applicable
- All applicable taxes

14.2 Bidders are requested to submit the cost breakdown of their bid price for each item with their bid as per Table 3. Should the cost breakdown be the same for all items on the bid, please indicate it clearly in the bid document by completing table 3 below and return it with the bid document. Bidders will not be allowed to change the cost breakdown of bid prices during the tenure of the contract.

Table 3: Cost Component

Cost Component	% Contribution	Index Publication	Index Reference
Finished product		Stats SA PO142.1 (PPI)	Table 1 PPI for steel products
Labor		Stats SA PO141 (CPI) OR Labor agreement	Table E All Items
Transport		Stats SA P0141 (CPI)	Table E All Items – Other running costs
Other		Specify	Documentary proof to accompany the bid document at the time of bidding and price adjustments.
TOTAL (Cost components must add up to 100%)	**100 %**		

14.3 Percentage weighted contribution – List % weighted contribution for each cost element must add up to 100%

SECTION B - EVALUATION CONDITIONS AND REQUIREMENTS OF BID

PART 1 - EVALUATION CRITERIA CONSISTING OF 3 STAGES

15. EVALUATION CRITERIA

15.1 This Bid will be evaluated into three stages as outlined below:

Table 4 – Summary of Evaluation stages

Stage 1	Stage 2	Stage 3
Compliance with legislative and administrative requirements	Compliance with mandatory requirements	Price and Specific Goals
Bidders must submit the documents as outlined in Par. 15.2 Only bidders that comply with these requirements will be evaluated in stage 2.	Bidders must submit the documents as outlined in Par.15.3. Only bidders that comply with these requirements will be evaluated in stage 3.	Bidder(s) will be evaluated in terms of table 5 of this bid document for price and applicable specific goals.

15.2 STAGE 1 - ADMINISTRATIVE EVALUATION

15.2.1 In this stage of evaluation, the process includes the verification of completeness and compliance with administrative and legislative document requirements.

15.2.2 SBD documents should not be retyped or redrafted and must be completed in original **black ink.**

15.2.3 The following Standard Bidding Documents and legislative requirements must be submitted with the bid proposal:

15.2.3.1 **SBD 1 -** Invitation to Bid fully completed and duly signed.

15.2.3.2 **Proof of Authority -** Company Resolution for the capacity under which this bid is signed.

15.2.3.3 Certified copies or Original of BBBEE certificate or Sworn Affidavit as per DTI prescribed template

15.2.3.4 **SBD 3.1** – Pricing Schedule fully completed and duly signed.

15.2.3.5 **SBD 4 -** Bidders Disclosure fully completed and duly signed.

15.2.3.6 **SBD 6.1 -** Preference Points Claim Form fully completed and duly signed.

15.2.3.7 **Central Supplier Database (CSD) /MAAA.....** number, a fully updated CSD report (not summarized) must be submitted.

15.3 STAGE 2 – MANDATORY REQUIREMENTS EVALUATION

Failure to comply with the mandatory requirements outlined below will invalidate the bid and such bids will be disqualified.

15.3.1 During this stage, the proposals received from bidders will be evaluated based on the mandatory requirements as listed below. Bidders are required to take cognizance of the mandatory bid requirements.

15.3.2 The following documents **MUST** be submitted together with the bid:

15.3.2.1 PRICING SCHEDULE SBD 3.1

(a) Bidders are required to submit responsive bids by completing all the prices per item

(b) Bidders must submit a pricing schedule SBD 3.1 for each Region /s they are bidding for, using the provided templates.

(c) **Fully Completed Pricing Schedule** Soft Copy **Excel Format** on **USB** and Hard Copy Schedule in original file **(Print A3 size)**. (Refer to soft copy **Annexure A** attached in Excel format.)

(d) All bid prices must be inclusive of supply, delivery and off-loading costs and **all applicable taxes**.

(e) The bid prices shall be for the unit of measure as indicated in the pricing schedule.

(f) Bidders must indicate their suppliers per item and sub-items.

(g) Bidders should submit pricing per Management Area/Region as indicated on the pricing schedule.

(h) Prices shall be quoted in South African Currency (Rands).

NB: Failure to submit a fully completed pricing schedule SBD 3.1 on/before closing date and time will invalidate the bid.

15.3.2.2 ANNEXURE B: AUTHORISATION DECLARATION (BD 27)

(a) Any bidder who does not normally keep stock of the item and is sourcing the goods from a third party (manufacturer/producer or dealer/distributor who normally keeps stock) for the purpose of delivering the item to DCS, must ensure that the attached BD 27 is completed by the supplier after they have familiarized themselves with the item(s)/ description(s)/ specifications and conditions of the bid for all relevant items required from this bid. **Failure to submit a BD 27 signed by the bidder and the supplier will invalidate the bid.**

(b) In the event that the "Authorization Declaration" (BD 27) form is not completed, the bidder must submit a signed third party's authorization declaration letter on the third party's letterhead.

(c) The bidder must ensure that the supply arrangements for the required goods have been mutually agreed upon with the supplier. No agreement between the bidder and the supplier will be binding on DCS.

(d) DCS reserves the right to verify any information supplied by the bidder and should the information be found to be false or incorrect, will invalidate the bid.

(e) DCS will only accept a completed and signed BD 27 or a signed letter issued on the official letterhead of the third party addressing the supply arrangements for the required items and it must be attached with the standard bidding documents at the closing date and time of the bid.

(f) If a contract has been concluded on the basis of sourcing the product(s) from a manufacturer/dealer, distributor and the bidder for some or the other reason change the manufacturer / dealer, DCS should immediately be notified and a new BD 27-form (Confirmation of supply arrangements between the bidder and the supplier) should be submitted to DCS.

15.3.2.3 REFERENCE LETTERS

Track record of the bidding company in the supply and delivery of steel. Bidder must provide at least two (2) contactable reference letters from previous client's where steel was delivered in the last thirty-six (36) months of closing date of the bid. Reference letters must be on the letterhead of the client signed and dated. The letter must indicate the period when the service (bid or quotation) was rendered.

NB: The department has the right to request additional information such as purchase order /appointment letter / service level agreement (failure to obtain additional information will lead to disqualification)

15.3.2.4 FINANCIAL CAPACITY

Bidders must provide DCS with one (1) of the documents indicated below to demonstrate their financial capacity to supply, deliver and off-load Steel for this tender.

(a) **Bank rating letter** - Bidders must provide DCS with a bank rating letter with a code "C" rating issued by a South African commercial bank registered in terms of the National Credit Act as part of the bid submission. The rating letter must be an original document and must contain a bank stamp not older than the date of advertisement of the bid.

(b) **Credit facility** - an overdraft facility linked to the business account. bidders must provide DCS with an overdraft confirmation letter issued by a South African commercial bank registered in terms of the National Credit Act as part of the bid submission.
The confirmation letter must be an original document and must contain a bank stamp not older than the date of advertisement of the bid. the **overdraft** must be for the value of at least **one million rand (R1 million)**

(c) The bidder must provide the Department with Six (6) months auditable financial statement's in order to demonstrate their financial capacity to supply, deliver and off-load Steel for period of three years.

15.4 STAGE 3 – PREFERENTIAL POINTS SYSTEM - PRICE AND SPECIFIC GOALS EVALUATION

15.4.1 The 90/10 preference points system will apply in terms of the Preferential Procurement Regulations pertaining to the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) and responsive proposals will be adjudicated as follows:

(a) Price (Maximum of 90 points)

(b) Specific Goals (Maximum 10 points)

15.4.2 A maximum of 90 points is allocated for price on the following basis:

90/10

$$Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where:

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

PMing = Price of lowest acceptable tender

However, if it becomes unclear during the course of the bidding process which preference point system will be applicable, then either the 80/20 or the 90/10 preference point system will apply, based on the lowest acceptable bid which will determine the applicable preference point system that will be used.

15.4.3 A maximum of 10 points may be awarded for being a historically disadvantaged individual and/or achieving any of the specified goals.

15.4.4 The points out of 10 will be allocated as follows:

Table 5: Specific goals (Preference Point System)

The specific goals in terms of this tender	Number of points allocated (90/10 system)	Proof required for claiming points
Women – 51% or more ownership	3	Affidavit (signed off by SAPS) confirming 51% or more women ownership or BBBEE certificate or Sworn Affidavit as per DTI prescribed template. **NB: Certified or Original**
Youth -51% or more youth owned	3	Affidavit (signed off by SAPS) confirming 51% or more youth ownership or BBBEE certificate or Sworn Affidavit as per DTI prescribed template **NB: Certified or Original**
Black - 51% or more black owned	2	Affidavit (signed off by SAPS) confirming 51% or more black ownership or BBBEE certificate or Sworn Affidavit as per DTI prescribed template **NB: Certified or Original**
Disability - 51% or more disability owned	2	Medical certificate signed by doctor. The medical certificate must be accompanied by affidavit signed off by SAPS confirming 51% or more directorship for disable. **NB: Certified or Original**

Joint Ventures and Consortiums

A trust, consortium or joint venture, will qualify for points for specific goals as indicated on table 5 above based on their B-BBEE certificate as a legal entity, provided that the entity submits their B-BBEE certificate. The certificate must have been issued by a verification agency accredited by SANAS.

A trust, consortium or joint venture will qualify for points for specific goals as indicated on table 5 above as an unincorporated entity, if the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid. These B-BBEE certificates must have been issued by a SANAS accredited verification agency.

(a) The points scored by a bidder in respect of the goals indicated above will be added to the points scored for price.

(b) Bidders are required to complete the SBD 6.1 form to claim preference points.

(c) Only a bidder who has completed and signed the declaration part of the SBD 6.1 preference points claim form will be considered for preference points.

(d) Certification by a Commissioner of Oaths should not be dated older than six (6) months prior to the closing date of this bid.

(e) Failure on the part of a bidder to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

(f) DCS may at any time, require a bidder to substantiate claims it has made with regard to preference points claimed.

(g) Points scored will be rounded off to the nearest 2 decimals.

(h) Preference points may not be claimed in respect of individuals who are not actively involved in the management of an enterprise or business and who do not exercise control over an enterprise or business commensurate with their degree of ownership.

16. RECOMMENDATION AND AWARD

16.1 Recommendation

(a) The Bid Evaluation Committee will recommend preferred responsive bidder(s) based on the outcome of Stages 1 – 3 to Bid Adjudication Committee for award and approval.

(b) The award of the Contract is subject to meeting ALL the requirements of the bid.

16.2 Award

(a) A bid must be awarded to the bidder who scored the highest total number of points in terms of the preference point systems (price and specific goals), unless objective criteria in terms of Section 2(1)(f) of the Act justify the award of the bid to another bidder.

(b) In the event that two or more bids have scored equal total points, the contract will be awarded to the bidder scoring the highest number of preference points for Special Goals.

(c) Should two or more bids be equal in all aspects, the award shall be decided by the drawing of lots.

(d) DCS may award the bid to more than one contractor (Panel of Service Providers). DCS may use its discretion to determine the number of service providers appointed per Region/workshop, whereby the awarding of the bid to more than one contractor will be based on the following factors:

- Risk Management for continuity of supply
- Volume of items
- Value of items
- Cost effectiveness
- Stimulation of market competition due to the nature of the commodity
- Uplifting the designated groups as per the PPPFA Regulations, 2022

The bid will be awarded to a maximum of Five (5) service providers per Regions/Management areas/Workshops.

(e) DCS reserves the right to limit the multiple or split award within a reasonable price difference percentage that will be deemed reasonable and cost effective.

(f) DCS reserves the right not to award items from the same source of supply (e.g. from one supplier who is the third party to the bidders/ who has provided the BD 27-forms to the bidders).

(g) DCS reserves the right to limit the award to the bidder in one or more management area/region as they may deem adequate during the evaluation and adjudication process.

PART 2 - ADDITIONAL BID REQUIREMENTS

17. SUPPLIER DUE DILIGENCE / VENDOR ASSESSMENT

17.1 DCS reserves the right to conduct due diligence prior to final award or at any time during the contract period and this may include pre-announced/un-announced site visits. The due diligence process may be conducted to also determine the capability of the bidder to service a contract of this magnitude. It is the responsibility of the bidder to inform their supplier(s) of this requirement. Non- compliance with the requirement may disqualify the bid in whole or part thereof.

17.2 It is the responsibility of the bidder to grant access to their premises, provide all the required information and answer all the questions during the due diligence process. Non-compliance with the requirement may disqualify the bid in whole or part thereof.

17.3 During the due diligence process the information submitted by the bidder will be verified and any misrepresentation thereof will disqualify the bid in whole or part thereof.

17.4 The premises/factory of the bidder and or his supplier(s) should be open at all reasonable hours for the inspection by a representative of DCS as part of the due diligence process. Non-compliance with the requirement may disqualify the bid in whole or part thereof.

17.5 Due diligence may also be applied to ensure that pricing is affordable, market related and aligned to end-user requirements. DCS reserves the right to conduct market analysis, if the price is below market value the Department will invalidate the bid.

17.6 Bidders must note that the outcomes of the due diligence process will form part of the bid recommendation and where necessary be applied to determine the multiple or split award application of the bid or not to award the bid in whole or part thereof.

18. COUNTER CONDITIONS

18.1 Bidders' attention is drawn to the fact that amendments to any of the bid conditions or setting of counter conditions by bidders may result in the invalidation of such bids.

19. RIGHT OF AWARD / NON-COMMITMENT

19.1 DCS reserves its following rights:

(a) To award in part or in full.

(b) Not to accept any of the bids submitted. Not to make any award of this bid.

(c) To withdraw or amend any of the bid conditions by notice in writing to all bidders prior to closing of the bid and post award.

(d) To cancel and/or terminate the bid process at any stage, including after the closing date and/or after presentations have been made, and/or after bids have been evaluated and/or after the preferred bidder(s) have been notified of their status as such.

(e) To award a bid based on which bidder is offering the best value for money, even if such bid is not the lowest price.

(f) In the event that an incorrect award has been made or an error occurred during evaluation and adjudication stage, DCS reserves the right to remedy the matter in any manner it may deem fit.

(g) Verify information and documentation of the service provider.

20. NEGOTIATION

20.1 DCS reserves the right to negotiate with one or more preferred bidder(s) identified in the evaluation process, regarding any terms and conditions, including price without offering the same opportunity to any other bidder(s) who has not been awarded the status of the preferred bidder(s).

21. LOCAL MANUFACTURING

21.1 Bidders are encouraged to supply locally manufactured items where feasible. Bidders must indicate in the pricing schedule the country of manufacture / production of the product(s).

SECTION C: POST AWARD

22. CONTRACT PRICE ADJUSTMENTS

22.1 Prices submitted for this bid are to remain unchanged (fixed) for the first six months from date of signing the contract and thereafter contractors can apply for price adjustments as outlined below.

22.2 Requests for price adjustment(s) after the first six months of the contract will be considered in terms of the formula (outlined in 22.5), defined areas of cost and defined periods of time.

22.3 Price adjustments for various steel types will be based on the Consumer Price Index (CPI) and Product Price Index (PPI).

22.4 Applications for price adjustments must be accompanied by documentary evidence in support of any adjustment claim.

22.5 The following price adjustment formula will be applicable for calculating contract price adjustments (CPA).

$$Pa = (1-V)Pt \left(D1 \frac{R1t}{R1o} + D2 \frac{R2t}{R2o} + D3 \frac{R3t}{R3o} + Dn \frac{R4t}{R4o} \right) + VPt$$

22.6 In extreme/unforeseen cases, DCS reserves the right to consider price adjustments before the stipulated six (6) months.

23. ORDERS

23.1 Orders will be placed by the Regions /Management Area who will be responsible for payment to contractors for goods delivered.

23.2 Before delivery of any product on this contract is conducted, the contractor must be in possession of an official order issued by an authorized official of DCS.

23.3 Contractors should note that the order(s) will be placed as and when required during the contract period and the relevant Department (End user) will specify delivery point(s).

23.4 Orders must be placed in accordance with the ranking, starting from first ranked suppliers in each item.

23.5 The supplier will be allowed a maximum of three (3) working days to formally respond to the pre-order letter
(RFQ), indicating how the requirements of the order will be fulfilled. The supplier must indicate whether the order will be fulfilled in full, partially, or completely declined.

23.6 In the event that the supplier responds to the pre-order letter, indicating that they cannot supply, the End User/ Department will engage the second supplier through the same process.

23.7 The participating department/institution may not discussions to purchase from the 2nd ranked supplier without confirmation and agreement from the 1st ranked supplier. Similarly, the participating department/institution may not engage in discussions to purchase from the next ranked supplier without confirmation and agreement from the aforementioned supplier to do so.

24. QUANTITIES

24.1 DCS is under no obligation to accept any quantity which is in excess of the order placed.

25. DELIVERIES

25.1 Delivery of goods must be made in accordance with the instructions appearing on the official order forms issued by the relevant Management Area (region).

25.2 Firm lead times for delivery must be quoted on the bid document for the duration of the contract, however, the Management Area reserves the right to negotiate specific delivery periods with the contractor(s).

25.3 Delivery shall be mutually agreed between service provider and the institutions concerned. All schedules provided by the relevant Management Area/Region are to be strictly adhered to, not have alternative replacements for the items requested. All deviations from the schedule must be communicated to the relevant Management Area/Region in advance.

25.4 Delivery will be accepted on weekdays between 08h00am and 14h00. Which must be considered by the contractor to prevent unnecessary delays or non-deliveries.

25.5 Products must be delivered and offloaded by the contractor in the transit / delivery area.

25.6 A delivery note stating the order number against which the delivery is affected must accompany all deliveries and dispatches.

25.7 Deliveries not complying with the order / specifications will be returned to the contractor at the contractor's expense.

25.8 DCS may postpone or delay deliveries if it finds itself in any such position, as a result of circumstances beyond its control, which will make it impossible to comply with the specified delivery dates.

25.9 DCS reserves the right to reject poor quality product. The cost of removal will be for the account of the contractor.

26. PENALTIES.

26.1 DCS will impose a penalty as a result of unsatisfactory performance (e.g. poor quality, late delivery, non-delivery, etc.).

26.2 In addition to a penalty being imposed, DCS reserves the right to act in accordance with paragraph 21.6 of the General Conditions of Contract (GCC), which reads "Upon delay beyond the delivery period in the case of a supplies contract, the purchaser (DCS) shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to their other rights, be entitled to claim damages from the supplier."

26.3 DCS may terminate the contract at its sole discretion due to unsatisfactory performance (e.g. poor quality, late delivery, non-delivery, etc.)

27. PAYMENTS.

27.1 Payments will only be affected by DCS in the following cases:

(a) The successful completion of a delivery in line with the specification.

(b) Invoices should be delivered/ posted or e-mailed to reach the institution that placed the order, timeously.

(c) The invoices must be accompanied by an inspection certificate and/or proof of delivery.

27.2 DCS will not make a payment to or consult with a third party.

27.3 Companies not registered for Value Added Tax (VAT), may not claim VAT on invoices.

SECTION D: SUPPLIER PERFORMANCE AND CONTRACT MANAGEMENT

28. CONTRACT MANAGEMENT

28.1 DCS and the Supplier will enter into a contract.

28.2 DCS will conduct meetings with the end users and Supplier to discuss contracting issues.

28.3 Supplier must notify DCS in writing of any circumstances that may adversely affect supply against the contract.

29. SUPPLIER PERFORMANCE MANAGEMENT

29.1 DCS will monitor the performance of the contractor for compliance to the terms of the contract as follows:

(a) Compliance to delivery lead times;

(b) Percentage of orders supplied in full;

(c) Compliance with reporting requirements according to the reporting schedule;

29.2 The Supplier shall not abandon, transfer, assign or sublet a contract or part thereof without prior written approval from DCS.

29.3 The Supplier must inform DCS immediately of circumstances that will adversely affect the execution of the contract. Full particulars of such circumstances as well as the period of delay must be furnished.

29.4 Contract performance management will be the responsibility of the Management Area (end-user) and where supplier performance disputes cannot be resolved between the Supplier and the end-user, the Directorate Contract Management will be informed for corrective action.

30. MERGERS, TAKE OVERS AND CHANGES IN SUPPLIER DETAILS

30.1 Where a contracted supplier plans to merge with or is going to be acquired by another entity, the Supplier must inform DCS in writing within thirty (30) days.

30.2 DCS reserves the right to agree to the transfer of contractual obligations to the new supplier under the prevailing conditions of contract or to cancel the contract.

30.3 A Supplier must inform DCS within 14 days of any changes of address, name, contact details, banking details and any other relevant information. The contractor must update CSD as well.

31. BREACH OF CONTRACT

31.1 DCS reserves the right to terminate the contract(s) for not honoring contract(s) obligations including submission of information.

32. SETTLEMENT OF DISPUTES

32.1 Should any dispute arise from the contract, paragraph 27 of the General Conditions of Contract shall apply.

33. TERMINATION

33.1 DCS shall be entitled to terminate this Agreement if one or more of the following occur:

(a) The contractor is provisionally or finally liquidated, making it impossible for the service provider to perform its functions in terms of this Contract;

(b) The contractor enters into settlement arrangements with their creditors;

(c) The contractor commits an act of insolvency;

(d) In the event that the contractor is a member of an unincorporated joint venture or consortium and the membership of such joint venture or Consortium changes.

33.2 DCS reserves its right to terminate the contract in the event that there is a change in ownership of the contractor that has the effect that over 50% ownership of the contractor belongs to the new owner without prior approval of DCS.

33.3 Either Party may terminate this contract for breach in the event that the other party fails to comply with any of its obligations in terms of this contract and having failed to remedy such breach within fourteen (14) calendar days' written notice to remedy such non-compliance and notwithstanding the provisions above, either Party may terminate this contract by giving the other Party thirty (30) days' written notice to that effect.

34. DECLARATION BY BIDDER

The contents of these Special Conditions have been noted and accepted and I declare that the information provided is accurate and correct).

Signature of the Bidder:

.....

Company Name:

.....

Date: .....

DCS 4

ICS 77.140.75; 97.140

ISBN 0-626-15594-0

SANS 657-4:2004
Edition 1.1

Any reference to SABS 657-4 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Steel tubes for non-pressure purposes

Part 4: Steel tubes of round, oval, square and rectangular section for furniture

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standards SouthAfrica
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Contents

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Steel tubes for non-pressure purposes

Part 4:
Steel tubes of round, oval, square and rectangular section for furniture

1 Scope

1.1 This part of the specification cover tubes of mild steel and stainless steel of round, oval, square and rectangular section for use in the manufacture of furniture. It does not cover tubes for pressure purposes.

NOTE
a) The standards referred to in this part of the specification are listed in appendix A.
b) Requirements that must be specified by the purchaser are listed in appendix B.
c) Information regarding the verification of the quality of the steel tubes (for furniture) produced to this part of the specification and a sampling plan that could be used to assess compliance with this part of the specification of a lot of tubes for furniture are given in appendix C.

2 Definition

For the purposes of this part of the specification the following definition shall apply:

2.1
acceptable
acceptable to the authority administering this standard, or to the parties concluding the purchase contract, as relevant **Amdt 1**

3 Requirements

3.1 Material

Tubes shall be of steel of a chemical composition that complies with one of the following:

a) mild steel (cold-rolled, hot-rolled, or hot-rolled pickled and oiled) having a

1) **carbon content** of 0,15 % max., and

2) **sulphur and phosphorus content** of (each) 0,06 %, max., or

b) austenitic stainless steel that complies with the relevant requirements for class A, type 1 or type 2 tubes of SANS 965.

3.2 Type, grade, supply condition and physical properties of tubes

3.2.1 The type, grade, supply condition and, when determined in accordance with 5.2, the physical properties of a tube, shall be the appropriate of those given in table 1.

3.2.2 When tested in accordance with 5.3 and 5.4, a tube shall show no sign of cracking or any other such defect.

Table 1 — Type, grade, supply condition and physical properties of tubes

1	2	3	4	5	6	7
Steel	**Type designation**	**Grade**	**Yield stress MPa, min.**	**Tensile strength MPa, min.**	**Elongation %, min.**	**Supply condition**
Mild	ERW	*230	230	320	10	Direct off mill (DOM) Heat-treated
		250	250	420	25	
Stain-less	Class A Type 1	*304	310	628	30	Direct off mill (DOM)
	Class A Type 2	304	186	538	45	Heat-treated, descaled and surface-finished+

* If a tube of this grade is in the non-heat-treated condition and is subject to annealing, brazing, welding or similar heating, the physical properties of the tube will be altered in the heat-affected zone.
+ The surface finish of a stainless steel tube shall be as required (see also appendix B(e)).

3.3 Nominal size of tube, wall thickness and tolerances

The nominal size of a tube and the wall thickness shall, for a mild steel or a stainless steel tube of round section and for a mild steel tube of oval section, be the appropriate of the dimensions given in tables 2, 3 and 4, respectively. A mild steel or a stainless steel tube of square or rectangular section shall be of the appropriate dimensions given in the appropriate of tables 5, 6, 7 and 8.

NOTE
a) The approximate mass included in these tables is for information only.
b) The dimensions specified in these tables shall be measured
1) across the flats in the case of tubes of square or rectangular section;
2) across the smallest and largest dimensions in the case of tubes of oval section.

3.4 Length

Tubes shall be supplied in random lengths in the range 4 - 7 m, or, if so required, in

a) specified cut lengths (subject to a tolerance of ± 1 mm, unless otherwise agreed upon); or

b) specified "mill cut" lengths (subject to a tolerance of 0^{+50}_{-0} mm).

3.5 Straigthtness

Any deviation from straightness in a length (see 3.4) of tube shall not exceed 1 in 1 000, measured at the midpoint of the length.

Table 2 — Tubes of round section (mild steel)

1	2	3	4	5	6	7	8				
Nominal size mm	External diameter mm		Wall thickness (as required) mm				Approximate mass kg/m				
			Nominal (see column 8)	Max.	Min.		Nominal wall thickness mm				
	Max.	Min.			Hot-rolled	Cold-rolled	0,9	1,2	1,6	1,8	2,0
16	16,1	15,9					0,355	0,438	0,568	0,630	0,691
20	20,1	19,9					0,424	0,556	0,726	0,806	0,888
25	25,1	24,9	0,9		*	0,81	0,529	0,704	0,923	1,03	1,13
32	32,1	31,9	1,2		*	1,10	0,691	0,911	1,20	1,34	1,48
38	38,1	37,9	1,6	Not limited	1,45	1,47	0,823	1,09	1,44	1,61	1,78
40	40,1	39,9	1,8		1,65	1,67	0,868	1,15	1,52	1,70	1,87
50	50,1	49,9	2,0		1,82	1,87	1,09	1,44	1,91	2,14	2,37
60	60,13	59,87					1,31	1,74	2,30	2,58	2,86
70	70,13	69,87					1,53	2,04	2,70	3,03	3,35

* These thicknesses are not available in the hot-rolled condition.

Table 3 — Tubes of round section (stainless steel)

1	2	3	4	5	6	7	
Nominal size mm	External diameter mm		Wall thickness mm			Approximate mass kg/m	
						Nominal wall thickness mm	
	Max.	Min.	Nominal (see column 7)	Max.	Min.	1,2	1,6
16	16,16	15,84				0,445	0,578
20	20,20	19,80				0,564	0,736
25	25,25	24,75	1,2	Not limited	1,14	0,704	0,936
32	32,32	31,68	1,6		1,52	0,925	1,22
50	50,50	49,50				1,46	1,94

Table 4 — Tubes of oval section (mild steel)

1	2	3	4	5	6		7	8
Nominal size mm	External dimensions mm			Wall thickness mm			Approximate mass kg/m	
	d_1	d_2	Tolerance	Nominal	Max.	Min.		
30 x 16	30	16	± 0,1	1,2	Not limited	1,10	0,716	–
30 x 16	30	16	± 0,1	1,6		1,47	–	0,939

Table 5 — Tubes of square section (mild steel)

1	2	3	4	5	6	7	8
Nominal size mm	External dimensions mm		Wall thickness mm				Approximate mass kg/m
	Max.	Min.	Nominal	Max.	Min.		
					Hot-rolled	Cold-rolled	
20 x 20	20,12	19,88	1,6		1,45	1,47	0,555
25 x 25	25,15	24,85	1,6		1,45	1,47	1,224
32 x 32	32,19	31,81	1,6	Not limited	1,45	1,47	1,562
40 x 40	40,24	39,76	1,6		1,45	1,47	1,860
50 x 50	50,30	49,70	1,6		1,45	1,47	2,360
65 x 65	65,39	64,61	1,6		1,45	1,47	2,865

Table 6 — Tubes of square section (stainless steel)

1	2	3	4	5	6	7
Nominal size mm	External dimensions mm		Wall thickness mm			Approximate mass kg/m
	Max.	Min.	Nominal	Max.	Min.	
25 x 25	25,15	24,85	1,6	Not limited	1,52	1,242
32 x 32	32,19	31,81	1,6		1,52	1,585

Table 7 — Tubes of rectangular section (mild steel)

1	2	3	4	5	6	7	8	9	10
Nominal size mm	External dimensions mm				Wall thickness mm			Approximate mass g/m	
	d_1		d_2		Nominal	Max.	Min.	Nominal wall thickness mm	
	Max.	Min.	Max.	Min.				1,2	1,6
50 x 20	50,30	49,70	20,12	19,88	1,2	Not	1,14	1,237	1,610
50 x 25	50,30	49,70	25,15	24,85	1,6	limited	1,52	1,329	1,860

Table 8 — Tubes of rectangular section (stainless steel)

1	2	3	4	5	6	7	8	9	10
Nominal size mm	External dimensions mm				Wall thickness mm			Approximate mass kg/m	
	d_1		d_2		Nominal	Max.	Min.	Nominal wall thickness mm	
	Max.	Min.	Max.	Min.				1,2	1,6
50 x 20	50,30	49,70	20,12	19,88	1,2	Not	1,14	1,256	1,634
50 x 25	50,30	49,70	25,15	24,85	1,6	limited	1,52	1,348	1,890

3.6 Tubes of square and rectangular section

When a tube of square or rectangular section is measured in accordance with 5.1,

a) any twist in the length, measured at least 30 mm from the end of the tube, shall not exceed 2,5 mm per metre of the length (see figure 1);

b) the external dimensions resulting from any concavity/convexity of the outer surface shall not deviate from the nominal external dimensions by more than 1 %; and

c) the corner radius of the tube (see figure 1) shall not exceed $3T$ where T is equal to the wall thickness. The nominal internal and external radii shall be $1,5T$ and $2,5T$.

3.7 Freedom from defects and finish

a) A tube shall be smooth, well finished and free from defects which may affect its appearance or impair its serviceability (or both). Mild steel tubes shall have a protective coating of oil. The surface finish of a stainless steel tube (mill, matt, polished or mirror finish, etc.) shall be as required.

b) Unless otherwise agreed upon, tubes shall have "mill cut" ends and any deformation caused by the cutting process shall not extend further than 30 mm from the cut.

c) If so required, the tube shall be suitable for plating[1)]

3.8 Cross-welds

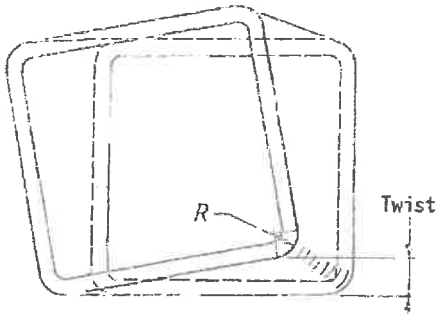
Tubes for furniture shall have no cross-welds.

3.9 Certification

When so required, the manufacturer shall supply a certificate in which it is stated that the tubes supplied against each order or contract are of the type and grade and the type of material specified in the order or contract.

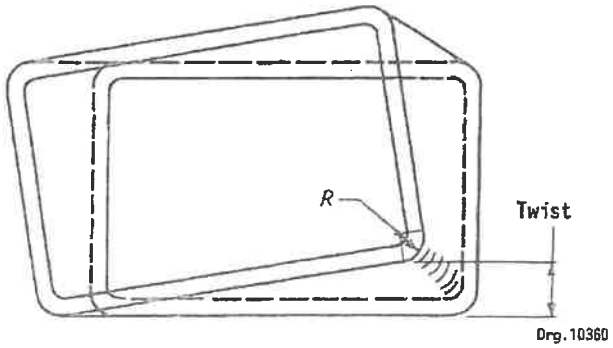
1) See SANS 135 and SANS 32/SANS 121 for further information on the suitability of steel plating.

Amdt 1 |



NOTE Twist to be measured at a distance of at least 30 mm from the end of the tube.

Figure 1(a) — Square section



NOTE Twist to be measured at a distance of at least 30 mm from the end of the tube.

Figure 1(b) — Rectangular section

Figure 1 — Measurement of twist

4 Packing and marking

4.1 Packing

Tubes shall be supplied loose or bundled. When supplied in bundles, only tubes of the same material, type, grade, finish, nominal length, size and wall thickness shall be bundled together.

4.2 Marking

The following information shall appear in legible and indelible marking on a label securely attached to each tube or bundle (see 4.1) of tubes:

a) the manufacturer's name or trade name or trade mark;

b) the nominal size of the tubes;

c) the type and grade designation of the material.

5 Inspection and methods of test

5.1 Inspection

Visually examine and measure (using an acceptable measuring device) each tube for compliance with all the requirements of sections 3 and 4 for which tests to assess compliance are not given in 5.2, 5.3 and 5.4.

5.2 Tensile tests

Use the appropriate test methods given in SANS 6892 and check for compliance with the appropriate requirements of 3.2. (For the determination of elongation use a gauge length of 5,65 x $\sqrt{So}$ (where $\sqrt{So}$ = the original cross-sectional area)). **Amdt 1**

5.3 Flattening test (round section)

From the tube under test, cut a ring of length at least 40 mm and so place it between two parallel flat surfaces (of width at least 1,5 times the length of the ring) that the weld is centred between (and parallel to) the flat surfaces. By applying a load to one of the flat surfaces, flatten the ring until the distance between the two surfaces is 60 ± 2 % of the original external diameter of the tube. Then examine the ring for compliance with the requirements of 3.2.2.

5.4 Drift expansion test (round section)

From the tube under test, cut a ring of length at least twice the actual external diameter of the tube. Gradually force, without shock, a conical drift that has an included angle of 60 ± 1°, into the ring until the external diameter at the expanded end has been increased by 12 ± 1 %, and then examine the ring for compliance with the requirements of 3.2.2.

Appendix A

Applicable standards

(This appendix does not form part of the requirements of the specification)

Reference is made to the latest issues of the following standards:

BS 6001-1, *Sampling procedures and tables for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limits (AQL) for lot-by-lot inspection.* **Amdt 1**

SANS 135/ISO 1456 (SABS ISO 1456), *Metallic coatings – Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium.* **Amdt 1**

SANS 32/EN 10240 (SABS EN 10240), *Internal and/or external protective coatings for steel tubes – Specification for hot-dip galvanized coatings applied in automatic plants.* **Amdt 1**

SANS 121/ISO 1461 (SABS ISO 1461), *Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.* **Amdt 1**

SANS 965 (SABS 965), *Welded austenitic stainless steel tubes.*

SANS 6892/ISO 6892 (SABS ISO 6892), *Metallic materials – Tensile testing at ambient temperature.* **Amdt 1**

SANS 9001/ISO 9001 (SABS ISO 9001), *Quality management systems – Requirements.* **Amdt 1**

Appendix B

Notes to purchasers

(This appendix does not form part of the requirements of the specification)

The following requirements must be specified in tender invitations and in each order or contract:

a) Whether mild steel or stainless steel tubes are required (see 3.1).

b) The grade and type (see 3.2).

c) The nominal size and nominal wall thickness (see 3.3).

d) The length (see 3.4).

e) The type of finish for stainless steel tubes (see 3.7(a)).

f) The finish of ends, if other than "mill cut" (see 3.7(b)).

g) That a certificate be furnished (see 3.9).

Appendix C

Quality evaluation of steel tubes produced to the requirements laid down in this part of the specification

(This appendix does not form part of the requirements of the specification)

C.1 Quality verification

C.1.1 When a purchaser requires quality verification on an ongoing basis of steel tubes produced to this part of the specification, it is suggested that, rather than to evaluation of the final product only, he also direct his attention to the quality management system applied by the manufacturer. In this connection it should be noted that SANS 9001 covers the provision of an integrated quality management system. **Amdt 1**

C.1.2 If no information about the implementation of quality control or testing during manufacturing is available to help in assessing the quality of a lot, and a purchaser wishes to establish by inspection and testing of samples of the final product whether a lot (as defined in C.2.1) of steel tubes produced to this part of the specification complies with its requirements, the sampling plan given in C.2 and based on the stated AQL('s) can be applied. (If a different AQL is required, reference should be made to applicable statistical sampling tables.) **Amdt 1**

It must be noted that

a) such a sampling plan applies to fully manufactured steel tubes only; and

b) a lot that in terms of the plan is deemed to comply with the specification, could contain defective tubes to an extent proportional to that permitted by the relevant acceptance number(s) given in the sampling table.

C.2 Assessment of compliance with the specification

C.2.1 Definitions

C.2.1.1
acceptable quality level (AQL)
the maximum percentage defective that for the purpose of sampling inspection can be considered satisfactory as a process average

C.2.1.2
defective
a tube that fails in one or more respects to comply with the relevant requirement of this part of the specification

C.2.1.3
lot
not less than 50 and not more than 10 000 steel tubes of the same material; type, grade, finish, nominal length, size and wall thickness, from one manufacturer, submitted at any one time for inspection and testing

C.2.2 Sampling

Use the following sampling procedure to determine whether a lot complies with this part of the specification and deem the samples so taken to represent the lot for the respective properties:

a) **Sampling for inspection**. From the lot take at random the number of steel tubes given in column 2 of table C.1, relative to the appropriate lot size given in column 1.

b) **Sample for testing**. After inspection of the sample taken in accordance with (a) above, take from it at random the number of steel tubes given in column 4 of table C.1

Table C.1 — Sample sizes*

1	2	3	4	5
Lot size, steel tubes	**Sample for inspection**		**Sample for testing**	
	Sample size, steel tubes	**Acceptance No. (AQL =1,5)**	**Sample size, steel tubes**	**Acceptance No. (AQL = 1,5)**
50 - 90	8	0	8	0
91 - 280	32	1	8	0
281 - 500	50	2	8	0
501 - 1 200	80	3	32	1
1 201 - 3 200	125	5	32	1
3 201 - 10 000	200	7	32	1

* Based on BS 6001-1 for general inspection level II (2) for inspection, and special inspection level S4 for testing.

Amdt 1

C.2.3 Criteria of compliance

Deem the lot to comply with the relevant requirements of this part of the specification if

a) on inspection of the sample taken in accordance with C.2.2(a), the number of defectives found does not exceed the relevant acceptance number given in column 3 of table C.1; and

b) on testing of the sample taken in accordance with C.2.2(b), the number of defectives found does not exceed the relevant acceptance number given in column 5 of table C.1.

Table of changes

Change No.	Date	Scope
Amdt 1	2004	Amended to replace the definition of "acceptable", to update referenced standards, and to delete the reference to the standardization mark.

Abstract

Covers tubes of mild steel and stainless steel of round, oval, square and rectangular section for use in the manufacture of furniture. It does not cover tubes for pressure purposes.

Keywords

furniture, mechanical testing, pipes, steels.

Foreword

This South African standard was approved by National Committee StanSA TC 5120.03, *Ferrous metals and their products*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

This edition cancels and replaces edition 1 (SABS 657-4:1987).

A vertical line in the margin shows where the text has been modified by amendment No. 1.

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ORIGINAL (1) DCS 6

Designation: A240/A240M – 14

Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications[1]

This standard is issued under the fixed designation A240/A240M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification[2] covers chromium, chromium-nickel, and chromium-manganese-nickel stainless steel plate, sheet, and strip for pressure vessels and for general applications.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 This specification is expressed in both inch-pound and SI units. However, unless the order specifies the applicable "M" specification designation (SI units), the material shall be furnished in inch-pound units.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[3]

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A480/A480M Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip

A923 Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels

E112 Test Methods for Determining Average Grain Size

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

2.2 *SAE Standard:*[4]

J 1086 Practice for Numbering Metals and Alloys (UNS)

3. General Requirements

3.1 The following requirements for orders for material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A480/A480M.

3.1.1 Definitions;
3.1.2 General requirements for delivery;
3.1.3 Ordering information;
3.1.4 Process;
3.1.5 Special tests;
3.1.6 Heat treatment;
3.1.7 Dimensions and permissible variations;
3.1.8 Workmanship, finish and appearance;
3.1.9 Number of tests/test methods;
3.1.10 Specimen preparation;
3.1.11 Retreatment;
3.1.12 Inspection;
3.1.13 Rejection and rehearing;
3.1.14 Material test report;
3.1.15 Certification; and
3.1.16 Packaging, marking, and loading.

4. Chemical Composition

4.1 The steel shall conform to the requirements as to chemical composition specified in Table 1 and shall conform to applicable requirements specified in Specification A480/A480M.

[1] This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.17 on Flat-Rolled and Wrought Stainless Steel.

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[2] For ASME Boiler and Pressure Vessel Code applications see related Specification SA-240 in Section II of that Code.

[3] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[4] Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, http://www.sae.org.

*A Summary of Changes section appears at the end of this standard

TABLE 1 *Continued*

UNS Designation[A]	Type[C]	Carbon[D]	Manganese	Phosphorus	Sulfur	Silicon	Chromium	Nickel	Molybdenum	Nitrogen	Copper	Other Elements[E, F]
S30940	309Cb[G]	0.08	2.00	0.045	0.030	0.75	22.0–24.0	12.0–16.0	...	...	...	Cb 10xC min, 1.10 max
S30941	309HCb[G]	0.04–0.10	2.00	0.045	0.030	0.75	22.0–24.0	12.0–16.0	...	...		Cb 10xC min, 1.10 max
S31008	310S	0.08	2.00	0.045	0.030	1.50	24.0–26.0	19.0–22.0	...			...
S31009	310H[G]	0.04–0.10	2.00	0.045	0.030	0.75	24.0–26.0	19.0–22.0	..			...
S31040	310Cb[G]	0.08	2.00	0.045	0.030	1.50	24.0–26.0	19.0–22.0	.	..		Cb 10xC min, 1.10 max
S31041	310HCb[G]	0.04–0.10	2.00	0.045	0.030	0.75	24.0–26.0	19.0–22.0				Cb 10xC min, 1.10 max
S31050	310 MoLN[G]	0.020	2.00	0.030	0.010	0.50	24.0–26.0	20.5–23.5	1.60–2.60	0.09–0.15		...
S31060		0.05–0.10	1.00	0.040	0.030	0.50	22.0–24.0	10.0–12.5	...	0.18–0.25	...	Ce + La 0.025–0.070 B 0.001–0.010
S31254		0.020	1.00	0.030	0.010	0.80	19.5–20.5	17.5–18.5	6.0–6.5	0.18–0.25	0.50–1.00	...
S31266		0.030	2.00–4.00	0.035	0.020	1.00	23.0–25.0	21.0–24.0	5.2–6.2	0.35–0.60	1.00–2.50	W 1.50–2.50
S31277		0.020	3.00	0.030	0.010	0.50	20.5–23.0	26.0–28.0	6.5–8.0	0.30–0.40	0.50–1.50	...
S31600	316	0.08	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	0.10	..	...
S31603	316L	0.030	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	0.10	.	...
S31609	316H	0.04–0.10	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	...	...	...
S31635	316Ti[G]	0.08	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	0.10	.	Ti 5 × (C + N) min, 0.70 max
S31640	316Cb[G]	0.08	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	0.10		Cb 10 × C min, 1.10 max
S31651	316N	0.08	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	0.10–0.16	...	
S31653	316LN	0.030	2.00	0.045	0.030	0.75	16.0–18.0	10.0–14.0	2.00–3.00	0.10–0.16	..	..
S31700	317	0.08	2.00	0.045	0.030	0.75	18.0–20.0	11.0–15.0	3.0–4.0	0.10	..	
S31703	317L	0.030	2.00	0.045	0.030	0.75	18.0–20.0	11.0–15.0	3.0–4.0	0.10		...
S31725	317LM[G]	0.030	2.00	0.045	0.030	0.75	18.0–20.0	13.5–17.5	4.0–5.0	0.20	...	.
S31726	317LMN[G]	0.030	2.00	0.045	0.030	0.75	17.0–20.0	13.5–17.5	4.0–5.0	0.10–0.20	...	
S31727	...	0.030	1.00	0.030	0.030	1.00	17.5–19.0	14.5–16.5	3.8–4.5	0.15–0.21	2.80–4.00	
S31753	317LN[G]	0.030	2.00	0.045	0.030	0.75	18.0–20.0	11.0–15.0	3.0–4.0	0.10–0.22	...	
S32050	...	0.030	1.50	0.035	0.020	1.00	22.0–24.0	20.0–23.0	6.0–6.8	0.21–0.32	0.40	..
S32053	...	0.030	1.00	0.030	0.010	1.00	22.0–24.0	24.0–26.0	5.0–6.0	0.17–0.22	...	...
S32100	321	0.08	2.00	0.045	0.030	0.75	17.0–19.0	9.0–12.0	...	0.10	...	Ti 5 × (C + N) min, 0.70 max
S32109	321H	0.04–0.10	2.00	0.045	0.030	0.75	17.0–19.0	9.0–12.0	...	...		Ti 4 × (C + N) min, 0.70 max
S32615	...	0.07	2.00	0.045	0.030	4.80–6.00	16.5–19.5	19.0–22.0	0.30–1.50		1.50–2.50	...
S32654		0.020	2.00–4.00	0.030	0.005	0.50	24.0–25.0	21.0–23.0	7.0–8.0	0.45–0.55	0.30–0.60	...
S33228		0.04–0.08	1.00	0.020	0.015	0.30	26.0–28.0	31.0–33.0	...			Ce 0.05–0.10 Cb 0.6–1.0 Al 0.025
S33400	334[G]	0.08	1.00	0.030	0.015	1.00	18.0–20.0	19.0–21.0	...			Al 0.15–0.60 Ti 0.15–0.60
S33425	...	0.08	1.50	0.045	0.020	1.00	21.0–23.0	20.0–23.0	2.00–3.00	...	..	Al 0.15–0.60 Ti 0.15–0.60
S33550		0.04–0.10	1.50	0.040	0.030	1.00	25.0–28.0	16.5–20.0	...	0.18–0.25		Cb 0.05–0.15 La + Ce 0.025–0.070
S34565	...	0.030	5.00–7.00	0.030	0.010	1.00	23.0–25.0	16.0–18.0	4.0–5.0	0.40–0.60		Cb 0.10
S34700	347	0.08	2.00	0.045	0.030	0.75	17.0–19.0	9.0–13.0				Cb 10 × C min, 1.00 max
S34709	347H	0.04–0.10	2.00	0.045	0.030	0.75	17.0–19.0	9.0–13.0	..			Cb 8 × C min, 1.00 max
S34751	347LN	0.005–0.020	2.00	0.045	0.030	1.00	17.0–19.0	9.0–13.0		0.06–0.10	.	Cb 0.20–0.50, 15 × C min

TABLE 1 *Continued*

UNS Designation[B]	Type[C]	Carbon[D]	Manganese	Phosphorus	Sulfur	Silicon	Chromium	Nickel	Molybdenum	Nitrogen	Copper	Other Elements[E,F]
S34800	348	0.08	2.00	0.045	0.030	0.75	17.0–19.0	9.0–13.0	...	...	...	(Cb + Ta) 10×C min, 1.00 max Ta 0.10 Co 0.20
S34809	348H	0.04–0.10	2.00	0.045	0.030	0.75	17.0–19.0	9.0–13.0				(Cb + Ta) 8×C min, 1.00 max Ta 0.10 Co 0.20
S35045	...	0.06–0.10	1.50	0.045	0.015	1.00	25.0–29.0	32.0–37.0	...		0.75	Al 0.15–0.60 Ti 0.15–0.60
S35115		0.030	1.00	0.045	0.015	0.50–1.50	23.0–25.0	19.0–22.0	1.50–2.50	0.20–0.30	...	...
S35125	...	0.10	1.00–1.50	0.045	0.015	0.50	20.0–23.0	31.0–35.0	2.00–3.00	...	...	Cb 0.25–0.60
S35135		0.08	1.00	0.045	0.015	0.60–1.00	20.0–25.0	30.0–36.0	4.0–4.8	...	0.75	Ti 0.40–1.00
S35140	...	0.10	1.00–3.00	0.045	0.030	0.75	20.0–22.0	25.0–27.0	1.00–2.00	0.08–0.20	...	Cb 0.25–0.75
S35315		0.04–0.08	2.00	0.040	0.030	1.20–2.00	24.0–26.0	34.0–36.0	...	0.12–0.18	...	Ce 0.03–0.10
S38100	XM-15[J]	0.08	2.00	0.030	0.030	1.50–2.50	17.0–19.0	17.5–18.5	...		...	...
S38815	...	0.030	2.00	0.040	0.020	5.50–6.50	13.0–15.0	13.0–17.0	0.75–1.50		0.75–1.50	Al 0.30
						Duplex (Austenitic-Ferritic)						
S31200		0.030	2.00	0.045	0.030	1.00	24.0–26.0	5.5–6.5	1.20–2.00	0.14–0.20	...	
S31260		0.03	1.00	0.030	0.030	0.75	24.0–26.0	5.5–7.5	2.5–3.5	0.10–0.30	0.20–0.80	W 0.10–0.50
S31803	...	0.030	2.00	0.030	0.020	1.00	21.0–23.0	4.5–6.5	2.5–3.5	0.08–0.20	...	
S32001		0.030	4.00–6.00	0.040	0.030	1.00	19.5–21.5	1.00–3.00	0.60	0.05–0.17	1.00	
S32003	...	0.030	2.00	0.030	0.020	1.00	19.5–22.5	3.0–4.0	1.50–2.00	0.14–0.20	...	
S32101		0.040	4.00–6.00	0.040	0.030	1.00	21.0–22.0	1.35–1.70	0.10–0.80	0.20–0.25	0.10–0.80	
S32202		0.030	2.00	0.040	0.010	1.00	21.5–24.0	1.00–2.80	0.45	0.18–0.26	...	
S32205	2205[G]	0.030	2.00	0.030	0.020	1.00	22.0–23.0	4.5–6.5	3.0–3.5	0.14–0.20	...	
S32304	2304[G]	0.030	2.50	0.040	0.030	1.00	21.5–24.5	3.0–5.5	0.05–0.60	0.05–0.20	0.05–0.60	
S32506	...	0.030	1.00	0.040	0.015	0.90	24.0–26.0	5.5–7.2	3.0–3.5	0.08–0.20	...	W 0.05–0.30
S32520	...	0.030	1.50	0.035	0.020	0.80	24.0–26.0	5.5–8.0	3.0–4.0	0.20–0.35	0.50–2.00	...
S32550	255[G]	0.04	1.50	0.040	0.030	1.00	24.0–27.0	4.5–6.5	2.9–3.9	0.10–0.25	1.50–2.50	...
S32750	2507[G,O]	0.030	1.20	0.035	0.020	0.80	24.0–26.0	6.0–8.0	3.0–5.0	0.24–0.32	0.50	...
S32760[K]	...	0.030	1.00	0.030	0.010	1.00	24.0–26.0	6.0–8.0	3.0–4.0	0.20–0.30	0.50–1.00	W 0.50–1.00
S32808	...	0.030	1.10	0.030	0.010	0.50	27.0–27.9	7.0–8.2	0.80–1.2	0.30–0.40		W 2.10–2.50
S32900	329	0.08	1.00	0.040	0.030	0.75	23.0–28.0	2.0–5.00	1.00–2.00	...	...	...
S32906	...	0.030	0.80–1.50	0.030	0.030	0.80	28.0–30.0	5.8–7.5	1.50–2.60	0.30–0.40	0.80	
S32950		0.030	2.00	0.035	0.010	0.60	26.0–29.0	3.5–5.2	1.00–2.50	0.15–0.35		
S39274	...	0.030	1.00	0.030	0.020	0.80	24.0–26.0	6.0–8.0	2.5–3.5	0.24–0.32	0.20–0.80	W 1.50–2.50
S81921		0.030	2.00–4.00	0.040	0.030	1.00	19.0–22.0	2.0–4.0	1.00–2.00	0.14–0.20	...	
S82011	...	0.030	2.00–3.00	0.040	0.020	1.00	20.5–23.5	1.0–2.0	0.10–1.00	0.15–0.27	0.50	
S82012		0.05	2.00–4.00	0.040	0.005	0.80	19.0–20.5	0.8–1.5	0.10–0.60	0.18–0.26	1.00	
S82031		0.05	2.50	0.040	0.005	0.80	19.0–22.0	2.0–4.0	0.80–1.40	0.14–0.24	1.00	
S82121	...	0.035	1.00–2.50	0.040	0.010	1.00	21.0–23.0	2.0–4.0	0.30–1.30	0.15–0.25	0.20–1.20	...
S82122		0.030	2.0–4.0	0.040	0.020	0.75	20.5–21.5	1.5–2.5	0.60	0.15–0.20	0.50–1.50	...
S82441	...	0.030	2.50–4.00	0.035	0.005	0.70	23.0–25.0	3.0–4.5	1.00–2.00	0.20–0.30	0.10–0.80	...
						Ferritic or Martensitic (Chromium)						
S32803		0.015	0.50	0.020	0.0035	0.55	28.0–29.0	3.0–4.0	1.80–2.50	0.020 (C+N) 0.030	...	Cb 12×(C+N) min, 0.15–0.50
S40500	405	0.08	1.00	0.040	0.030	1.00	11.5–14.5	0.60	.	...		Al 0.10–0.30
S40900[L]	409[L]											
S40910	.	0.030	1.00	0.040	0.020	1.00	10.5–11.7	0.50	...	0.030	...	Ti 6×(C+N) min, 0.50 max; Cb 0.17
S40920	...	0.030	1.00	0.040	0.020	1.00	10.5–11.7	0.50	...	0.030	...	Ti 8×(C+N) min, Ti 0.15–0.50; Cb 0.10

TABLE 1 *Continued*

UNS Designation[B]	Type[C]	Carbon[D]	Manganese	Phosphorus	Sulfur	Silicon	Chromium	Nickel	Molybdenum	Nitrogen	Copper	Other Elements[E, F]
S40930	...	0.030	1.00	0.040	0.020	1.00	10.5–11.7	0.50	...	0.030	...	(Ti+Cb) [0.08+8 x(C+N)] min, 0.75 max; Ti 0.05 min Cb 0.18–0.40
S40945	...	0.030	1.00	0.040	0.030	1.00	10.5–11.7	0.50	...	0.030	...	Ti 0.05–0.20
S40975	...	0.030	1.00	0.040	0.030	1.00	10.5–11.7	0.50–1.00	...	0.030	...	Ti 6x(C+N) min, 0.75 max
S40977	...	0.030	1.50	0.040	0.015	1.00	10.5–12.5	0.30–1.00	...	0.030	...	...
S41000	410	0.08–0.15	1.00	0.040	0.030	1.00	11.5–13.5	0.75	...	...	...	...
S41003	...	0.030	1.50	0.040	0.030	1.00	10.5–12.5	1.50	...	0.030	...	...
S41008	410S	0.08	1.00	0.040	0.030	1.00	11.5–13.5	0.60	...	...	...	...
S41045	...	0.030	1.00	0.040	0.030	1.00	12.0–13.0	0.50	...	0.030	...	Cb 9x(C+N) min, 0.60 max
S41050	...	0.04	1.00	0.045	0.030	1.00	10.5–12.5	0.60–1.10	...	0.10	...	...
S41500[M]	...	0.05	0.50–1.00	0.030	0.030	0.60	11.5–14.0	3.5–5.5	0.50–1.00	...	...	...
S42035	...	0.08	1.00	0.045	0.030	1.00	13.5–15.5	1.0–2.5	0.2–1.2	...	...	Ti 0.30–0.50
S42900	429[G]	0.12	1.00	0.040	0.030	1.00	14.0–16.0	...	...	...	...	...
S43000	430	0.12	1.00	0.040	0.030	1.00	16.0–18.0	0.75	...	...	...	...
S43035	439	0.030	1.00	0.040	0.030	1.00	17.0–19.0	0.50	...	0.030	...	Ti [0.20+4(C+N)] min, 1.10 max; Al 0.15
S43400	434	0.12	1.00	0.040	0.030	1.00	16.0–18.0	...	0.75–1.25	...	...	...
S43600	436	0.12	1.00	0.040	0.030	1.00	16.0–18.0	...	0.75–1.25	...	...	Cb 5xC min, 0.80 max
S43932		0.030	1.00	0.040	0.030	1.00	17.0–19.0	0.50	...	0.030	...	(Ti+Cb) [0.20+4(C+N)] min, 0.75 max; Al 0.15
S43940		0.030	1.00	0.040	0.015	1.00	17.5–18.5	...	...	...	...	Ti 0.10–0.60 Cb [0.30+(3xC)] min
S44100		0.030	1.00	0.040	0.030	1.00	17.5–19.5	1.00	...	0.030	...	Ti 0.1–0.5 Cb [0.3 + (8x C)] min, 0.90 max
S44330	...	0.025	1.00	0.040	0.030	1.00	20.0–23.0	...	...	0.025	0.30–0.60	(Ti+Cb) 8x(C+N) min, 0.80 max
S44400	444	0.025	1.00	0.040	0.030	1.00	17.5–19.5	1.00	1.75–2.50	0.035	...	(Ti+Cb)[0.20+4(C+N)] min, 0.80 max
S44500		0.020	1.00	0.040	0.012	1.00	19.0–21.0	0.60	...	0.03	0.30–0.60	Cb 10x(C+N) min, 0.80 max
S44535	...	0.030	0.30–0.80	0.050	0.020	0.50	20.0–24.0	...	...	...	0.50	La 0.04–0.20 Ti 0.03–0.20 Al 0.50
S44536		0.015	1.00	0.040	0.030	1.00	20.0–23.0	0.5	...	0.015	...	(Ti+Cb) 6X(C+N)–0.8, Cb min 0.05
S44537	...	0.030	0.8	0.050	0.006	0.1–0.6	20.0–24.0	0.5	...	0.04	0.5	Al 0.1 W 1.0–3.0 Cb 0.2–1.0 Ti 0.02–0.20
S44626	XM-33[J]	0.06	0.75	0.040	0.020	0.75	25.0–27.0	0.50	0.75–1.50	0.04	0.20	La 0.04–0.20 Ti 0.20–1.00;
S44627	XM-27[J]	0.010[N]	0.40	0.020	0.020	0.40	25.0–27.5	0.50	0.75–1.50	0.015[N]	0.20	Ti 7(C+N) min Cb 0.05–0.20 (Ni + Cu) 0.50

TABLE 1 *Continued*

UNS Designation[B]	Type[C]	Carbon[D]	Manganese	Phosphorus	Sulfur	Silicon	Chromium	Nickel	Molybdenum	Nitrogen	Copper	Other Elements[E, F]
S44635	...	0.025	1.00	0.040	0.030	0.75	24.5–26.0	3.5–4.5	3.5–4.5	0.035	...	(Ti+Cb) [0.20+4 (C+N)] min, 0.80 max
S44660	...	0.030	1.00	0.040	0.030	1.00	25.0–28.0	1.0–3.5	3.0–4.0	0.040		(Ti+Cb) 0.20 – 1.00, Ti + Cb ≥6x(C+N) min
S44700	...	0.010	0.30	0.025	0.020	0.20	28.0–30.0	0.15	3.5–4.2	0.020	0.15	(C+N) 0.025
S44725	...	0.015	0.40	0.040	0.020	0.040	25.0–28.5	0.30	1.5–2.5	0.018		(Ti+Cb) ≥8x(C+N)
S44735		0.030	1.00	0.040	0.030	1.00	28.0–30.0	1.00	3.6–4.2	0.045		(Ti+Cb) 0.20–1.00, (Ti+Cb) 6x (C+N) min
S44800		0.010	0.30	0.025	0.020	0.20	28.0–30.0	2.00–2.50	3.5–4.2	0.020	0.15	(C+N) 0.025
S46800		0.030	1.00	0.040	0.030	1.00	18.0–20.0	0.50		0.030		Ti 0.07–0.30 Cb 0.10–0.80 (Ti+Cb) [0.20+4 (C+N)] min, 0.80 max

[A] Maximum, unless range or minimum is indicated.
[B] Designation established in accordance with Practice E527 and SAE J 1086.
[C] Unless otherwise indicated, a grade designation originally assigned by the American Iron and Steel Institute (AISI).
[D] Carbon analysis shall be reported to nearest 0.01 % except for the low-carbon types, which shall be reported to nearest 0.001 %.
[E] The terms Columbium (Cb) and Niobium (Nb) both relate to the same element.
[F] When two minimums or two maximums are listed for a single type, as in the case of both a value from a formula and an absolute value, the higher minimum or lower maximum shall apply.
[G] Common name, not a trademark, widely used, not associated with any one producer.
[H] Iron shall be determined arithmetically by difference of 100 minus the sum of the other specified elements.
[I] (Al + Ti) 0.85–1.20.
[J] Naming system developed and applied by ASTM.
[K] Cr + 3.3 Mo + 16 N = 40 min.
[L] S40900 (Type 409) has been replaced by S40910, S40920, and S40930. Unless otherwise specified in the ordering information, an order specifying S40900 or Type 409 shall be satisfied by any one of S40910, S40920, or S40930 at the option of the seller. Material meeting the requirements of S40910, S40920, or S40930, may at the option of the manufacturer be certified as S40900.
[M] Plate version of CA-6NM.
[N] Product (check or verification) analysis tolerance over the maximum limit for C and N in XM-27 shall be 0.002 %.
[O] Cr + 3.3 Mo + 16 N = 41 min.

5. Mechanical Properties

5.1 The material shall conform to the mechanical properties specified in Table 2.

5.2 When specified by the purchaser, Charpy impact tests shall be performed in accordance with Supplementary Requirement S1.

6. Materials for High-Temperature Service

6.1 The austenitic *H* Types shall conform to an average grain size of ASTM No. 7 or coarser as measured by Test Methods E112.

6.2 Supplementary Requirement S2 shall be invoked when non-H grade austenitic stainless steels are ordered for ASME Code applications for service above 1000°F [540°C].

6.3 Grade S31060, unless otherwise specified in the purchase order, shall conform to an average grain size of ASTM No. 7 or coarser, as measured by Test Methods E112.

7. Keywords

7.1 chromium; chromium-nickel stainless steel; chromium-manganese-nickel stainless steel; pressure vessels

TABLE 2 Mechanical Test Requirements

UNS Designation	Type[A]	Tensile Strength, min		Yield Strength,[B] min		Elongation in 2 in. or 50 mm, min, %	Hardness, max[C]		Cold Bend[C,D]
		ksi	MPa	ksi	MPa		Brinell. HBW	Rockwell B	
Austenitic (Chromium-Nickel) (Chromium-Manganese-Nickel)									
N08020	...	80	550	35	240	30[E]	217	95	not required
N08367									
Sheet and Strip		100	690	45	310	30	...	100	not required
Plate		95	655	45	310	30	241	...	not required
N08700		80	550	35	240	30	192	90	not required
N08800	800[F]	75	520	30[G]	205[G]	30[H]		...	not required
N08810	800H[F]	65	450	25[G]	170[G]	30	...	...	not required
N08811	...	65	450	25	170	30	..	...	not required
N08904	904L[F]	71	490	31	220	35		90	not required
N08925	...	87	600	43	295	40	..	...	not required
N08926	...	94	650	43	295	35		...	not required
S20100	201-1[I]	75	515	38	260	40	217	95	...
S20100	201-2[I]	95	655	45	310	40	241	100	...
S20103	201L[F]	95	655	38	260	40	217	95	not required
S20153	201LN[F]	95	655	45	310	45	241	100	not required
S20161	...	125	860	50	345	40	255	25[J]	not required
S20200	202	90	620	38	260	40	241	...	...
S20400	...	95	655	48	330	35	241	100	not required
S20431	...	90	620	45	310	40	241	100	not required
S20432	...	75	515	30	205	40	201	92	not required
S20433	...	80	550	35	240	40	217	95	not required
S20910	XM-19[K]								
Sheet and Strip		105	725	60	415	30	241	100	not required
Plate		100	690	55	380	35	241	100	not required
S21600	XM-17[K]								
Sheet and Strip		100	690	60	415	40	241	100	not required
Plate		90	620	50	345	40	241	100	not required
S21603	XM-18[K]								
Sheet and Strip		100	690	60	415	40	241	100	not required
Plate		90	620	50	345	40	241	100	not required
S21640	...	95	650	45	310	40	...	...	not required
S21800	...	95	655	50	345	35	241	100	not required
S21904	XM-11[K]								
Sheet and Strip		100	690	60	415	40	241	100	not required
Plate		90	620	50	345	45	241	100	not required
S24000	XM-29[K]								
Sheet and Strip		100	690	60	415	40	241	100	not required
Plate		100	690	55	380	40	241	100	not required
S30100	301	75	515	30	205	40	217	95	not required
S30103	301L[F]	80	550	32	220	45	241	100	not required
S30153	301LN[F]	80	550	35	240	45	241	100	not required
S30200	302	75	515	30	205	40	201	92	not required
S30400	304	75	515	30	205	40	201	92	not required
S30403	304L	70	485	25	170	40	201	92	not required
S30409	304H	75	515	30	205	40	201	92	not required
S30415	...	87	600	42	290	40	217	95	not required
S30435		65	450	29	155	45	187	90	...

TABLE 2 *Continued*

UNS Designation	Type[A]	Tensile Strength, min		Yield Strength,[B] min		Elongation in 2 in. or 50 mm, min, %	Hardness, max[C]		Cold Bend[C,D]
		ksi	MPa	ksi	MPa		Brinell, HBW	Rockwell B	
S30441	...	75	515	30	205	40	201	92	not required
S30451	304N	80	550	35	240	30	217	95	not required
S30452	XM-21[K]								
Sheet and Strip		90	620	50	345	30	241	100	not required
Plate		85	585	40	275	30	241	100	not required
S30453	304LN	75	515	30	205	40	217	95	not required
S30500	305	70	485	25	170	40	183	88	not required
S30530	...	75	515	30	205	40	201	92	not required
S30600		78	540	35	240	40	...	...	...
S30601	...	78	540	37	255	30	...	...	not required
S30615		90	620	40	275	35	217	95	not required
S30815	...	87	600	45	310	40	217	95	...
S30908	309S	75	515	30	205	40	217	95	not required
S30909	309H[F]	75	515	30	205	40	217	95	not required
S30940	309Cb[F]	75	515	30	205	40	217	95	not required
S30941	309HCb[F]	75	515	30	205	40	217	95	not required
S31008	310S	75	515	30	205	40	217	95	not required
S31009	310H[F]	75	515	30	205	40	217	95	not required
S31040	310Cb[F]	75	515	30	205	40	217	95	not required
S31041	310HCb[F]	75	515	30	205	40	217	95	not required
S31050	310 MoLN[F]								
	$t \le 0.25$ in.	84	580	39	270	25	217	95	not required
	$t > 0.25$ in.	78	540	37	255	25	217	95	not required
S31060	...	87	600	41	280	40	217	95	not required
S31254									
Sheet and Strip		100	690	45	310	35	223	96	not required
Plate		95	655	45	310	35	223	96	not required
S31266		109	750	61	420	35	...	...	not required
S31277	...	112	770	52	360	40	...	...	not required
S31600	316	75	515	30	205	40	217	95	not required
S31603	316L	70	485	25	170	40	217	95	not required
S31609	316H	75	515	30	205	40	217	95	not required
S31635	316Ti[F]	75	515	30	205	40	217	95	not required
S31640	316Cb[F]	75	515	30	205	30	217	95	not required
S31651	316N	80	550	35	240	35	217	95	not required
S31653	316LN	75	515	30	205	40	217	95	not required
S31700	317	75	515	30	205	35	217	95	not required
S31703	317L	75	515	30	205	40	217	95	not required
S31725	317LM[F]	75	515	30	205	40	217	95	not required
S31726	317LMN[F]	80	550	35	240	40	223	96	not required
S31727	...	80	550	36	245	35	217	96	not required
S31753	317LN	80	550	35	240	40	217	95	not required
S32050	...	98	675	48	330	40	250	...	not required
S32053	...	93	640	43	295	40	217	96	not required
S32100	321	75	515	30	205	40	217	95	not required
S32109	321H	75	515	30	205	40	217	95	not required
S32615[L]	...	80	550	32	220	25	...	...	not required
S32654	...	109	750	62	430	40	250	...	not required
S33228	...	73	500	27	185	30	217	95	not required
S33400	334[F]	70	485	25	170	30	...	92	not required

TABLE 2 *Continued*

UNS Designation	Type[A]	Tensile Strength, min		Yield Strength,[B] min		Elongation in 2 in. or 50 mm, min, %	Hardness, max[C]		Cold Bend[C,D]
		ksi	MPa	ksi	MPa		Brinell, HBW	Rockwell B	
S33425	.	75	515	30	205	40	...	...	not required
S33550	...	87	600	41	280	35	217	95	not required
S34565		115	795	60	415	35	241	100	not required
S34700	347	75	515	30	205	40	201	92	not required
S34709	347H	75	515	30	205	40	201	92	not required
S34751	347LN	75	515	30	205	40	201	92	not required
S34800	348	75	515	30	205	40	201	92	not required
S34809	348H	75	515	30	205	40	201	92	not required
S35045		70	485	25	170	35	...	...	not required
S35115		85	585	40	275	40	241	100	not required
S35125		70	485	30	205	35	...	...	not required
S35135									
Sheet and Strip		80	550	30	205	30	...	...	not required
Plate		75	515	30	205	30	...	...	not required
S35140	...	90	620	40	275	30	241	100	not required
S35315	..	94	650	39	270	40	217	95	not required
S38100	XM-15[K]	75	515	30	205	40	217	95	not required
S38815	...	78	540	37	255	30	...	...	not required
				Duplex (Austenitic-Ferritic)					
S31200		100	690	65	450	25	293	31[J]	not required
S31260	...	100	690	70	485	20	290	31[J]	...
S31803	..	90	620	65	450	25	293	31[J]	not required
S32001		90	620	65	450	25	...	25[J]	not required
S32003	...								
	t ≤ 0.187 in. [5.00 mm]	100	690	70	485	25	293	31[J]	not required
	t > 0.187 in. [5.00 mm]	95	655	65	450	25	293	31[J]	not required
S32101	...								
	t ≤ 0.187 in. [5.00 mm]	101	700	77	530	30	290	31[J]	not required
	t > 0.187 in. [5.00 mm]	94	650	65	450	30	290	31[J]	not required
S32202	...	94	650	65	450	30	290	31[J]	not required
S32205	2205[F]	95	655	65	450	25	293	31[J]	not required
S32304	2304[F]	87	600	58	400	25	290	32[J]	not required
S32506	...	90	620	65	450	18	302	32[J]	not required
S32520	...	112	770	80	550	25	310	32[J]	not required
S32550	255[F]	110	760	80	550	15	302	32[J]	not required
S32750	2507[F]	116	795	80	550	15	310	32[J]	not required
S32760	...	108	750	80	550	25	270	28[J]	not required
S32808	...	101	700	72	500	15	310	32[J]	not required
S32900	329	90	620	70	485	15	269	28[J]	not required
S32906	...	116	800	94	650	25.0	310	32[J]	not required
	t < 0.4 in. [10.0 mm]								
	t ≥ 0.4 in. [10.0 mm]	109	750	80	550	25.0	310	32[J]	not required

TABLE 2 *Continued*

UNS Designation	Type[A]	Tensile Strength, min		Yield Strength,[B] min		Elongation in 2 in. or 50 mm, min, %	Hardness, max[C]		Cold Bend[D,O]
		ksi	MPa	ksi	MPa		Brinell, HBW	Rockwell B	
S32950[M]	...	100	690	70	485	15	293	32[J]	not required
S39274		116	800	80	550	15	310	32[J]	not required
S81921		90	620	65	450	25	293	31[J]	not required
S82011	...	101	700	75	515	30	293	31[J]	not required
	t ≤ 0.187 in. [5.00 mm]								
	t > 0.187 in. [5.00 mm]	95	655	65	450	30	293	31[J]	not required
S82012	t >0.187 in. [5.00 mm]	94	650	58	400	35	290		
	t ≤0.187 in. [5.00 mm]	102	700	73	500	35		31[J]	not required
S82031	t>0.187 in. [5.00 mm]	94	650	58	400	35	290		not required
	t≤0.187 in. [5.00 mm]	102	700	73	500	35		31[J]	not required
S82121	...	94	650	65	450	25	286	30[J]	not required
S82122	t<0.118 in. [3.00 mm]	101	700	72	500	25	290	32[J]	not required
	t≥0.118 in. [3.00 mm]	87	600	58	400	30	290	32[J]	not required
S82441	...								
	t < 0.4 in. [10.0 mm]	107	740	78	540	25	290	31[J]	not required
	t ≥ 0.4 in. [10.0 mm]	99	680	70	480	25	290	31[J]	not required
		Ferritic or Martensitic (Chromium)							
S32803	...	87	600	72	500	16	241	100	not required
S40500	405	60	415	25	170	20	179	88	180
S40900[N]	409[N]								
S40910	...	55	380	25	170	20	179	88	180
S40920	..	55	380	25	170	20	179	88	180
S40930	...	55	380	25	170	20	179	88	180
S40945		55	380	30	205	22	...	80	180
S40975	...	60	415	40	275	20	197	92	180
S40977		65	450	41	280	18	180	88	not required
S41000	410	65	450	30	205	20	217	96	180
S41003	...	66	455	40	275	18	223	20[J]	not required
S41008	410S	60	415	30	205	22[O]	183	89	180
S41045	...	55	380	30	205	22	...	80	180
S41050	...	60	415	30	205	22	183	89	180
S41500	...	115	795	90	620	15	302	32[J]	not required
S42035	...	80	550	55	380	16	180	88	not required
S42900	429[F]	65	450	30	205	22[O]	183	89	180
S43000	430	65	450	30	205	22[O]	183	89	180
S43035	439	60	415	30	205	22	183	89	180
S43400	434	65	450	35	240	22	...	89	180
S43600	436	65	450	35	240	22	...	89	180
S43932		60	415	30	205	22	183	89	180
S43940		62	430	36	250	18	180	88	not required
S44330	...	56	390	30	205	22	187	90	not required
S44100	...	60	414	35	241	20	190	90	not required

TABLE 2 *Continued*

UNS Designation	Type[A]	Tensile Strength,[B] min		Yield Strength,[B] min		Elongation in	Hardness, max[C]		Cold Bend[D,P]
		ksi	MPa	ksi	MPa	2 in. or 50 mm, min, %	Brinell, HBW	Rockwell B	
S44400	...	60	415	40	275	20	217	96	180
S44500	...	62	427	30	205	22	...	83	180
S44535	..	58	400	36	250	25[E]	...	50–90[P]	not required
S44536	..	60	410	35	245	20	192	90	180
S44537	...	65	450	46	320	18[O]	200	93	180
S44626	XM-33[K]	68	470	45	310	20	217	96	180
S44627	XM-27[K]	65	450	40	275	22	187	90	180
S44635	...	90	620	75	515	20	269	28[J]	180
S44660		85	585	65	450	18	241	100	180
S44700	...	80	550	60	415	20	223	20[J]	180
S44725		65	450	40	275	20	210	95	180
S44735	...	80	550	60	415	18	255	25[J]	180
S44800		80	550	60	415	20	223	20[J]	180
S46800	...	60	415	30	205	22	...	90	180

[A] Unless otherwise indicated, a grade designation originally assigned by the American Iron and Steel Institute (AISI).
[B] Yield strength shall be determined by the offset method at 0.2 % in accordance with Test Methods and Definitions A370. Unless otherwise specified (see Specification A480/A480M, paragraph 4.1.11, Ordering Information), an alternative method of determining yield strength may be based on total extension under load of 0.5 %.
[C] Either Brinell or Rockwell B Hardness is permissible.
[D] Bend tests are not required for chromium steels (ferritic or martensitic) thicker than 1 in. [25 mm] or for any austenitic or duplex (austenitic-ferritic) stainless steels regardless of thickness.
[E] Elongation for thickness, less than 0.015 in. [0.38 mm] shall be 20 % minimum. In 1 in. [25.4 mm].
[F] Common name, not a trademark, widely used, not associated with any one producer.
[G] Yield strength requirements shall not apply to material under 0.020 in [0.50 mm] in thickness.
[H] Not applicable for thicknesses under 0.010 in. [0.25 mm].
[I] Type 201 is generally produced with a chemical composition balanced for rich side (Type 201-1) or lean side (Type 201-2) austenite stability depending on the properties required for specific applications.
[J] Rockwell C scale.
[K] Naming system developed and applied by ASTM.
[L] For S32615, the grain size as determined in accordance with the Test Methods E112, Comparison Method, Plate II, shall be No. 3 or finer.
[M] Prior to Specification A240 – 99b, the tensile value for S32950 was 90 ksi.
[N] S40900 (Type 409) has been replaced by S40910, S40920, and S40930. Unless otherwise specified in the ordering information, an order specifying S40900 or Type 409 shall be satisfied by any one of S40910, S40920, or S40930 at the option of the seller. Material meeting the requirements of S40910, S40920, or S40930, may at the option of the manufacturer be certified as S40900.
[O] Material 0.050 in [1.27 mm] and under in thickness shall have a minimum elongation of 20 %.
[P] Hardness is required to be provided for information only, but is not required to meet a particular requirement.
[Q] The minimum elongation for plates thicker than 0.630 in. (16 mm) shall be 8 %.

SUPPLEMENTARY REQUIREMENTS

A supplementary requirement shall apply only when specified in the purchase order.

S1. Charpy Impact Testing of Plate

S1.1 Charpy impact tests shall be conducted in accordance with Test Methods and Definitions A370.

S1.2 *Number of Tests*—One impact test (3 specimens) shall be made from one plate per heat treatment lot in the final heat treated condition.

S1.3 *Orientation of Test Specimens*—Unless specified as transverse specimens (long axis of the specimen transverse to the final rolling direction, root of the notch perpendicular to the rolling face) on the purchase order, the orientation of the specimens shall be longitudinal (long axis of the specimen parallel to the final rolling direction, root of the notch perpendicular to the rolling face). The manufacturer is permitted to test transverse specimens provided that such tests meet the acceptance criteria applicable to longitudinal specimens. Unless otherwise specified on the purchase order, the specimens shall be taken so as to include the mid-thickness of the product.

S1.4 *Test Temperature*—The purchaser shall specify the test temperature. The manufacturer is permitted to test specimens at a temperature lower than that specified by the purchaser, provided that such tests shall meet the acceptance criteria applicable to specimens tested at the specified temperature (see the note below).

NOTE S1.1—Test Methods A923, Method B, applicable to some duplex (austenitic-ferritic) stainless steels as listed in Test Methods A923, uses a Charpy impact test for the purpose of determining the absence of detrimental intermetallic phases. Method B specifies a test temperature and acceptance criterion, expressed as impact energy, for each type of steel covered. It may be economical for the Charpy impact tests performed on duplex stainless steels covered in both Specification A240 and Test Methods A923 to be performed at the lower of the temperatures specified by this supplementary requirement and Test Methods A923 Method B, with measurement of both lateral expansion and impact energy.

S1.5 *Acceptance Limit*—Unless otherwise specified on the purchase order, each of the three specimens tested shall show a lateral expansion opposite the notch of not less than 0.015 in. [0.38 mm].

S1.6 *Records*—The recorded results shall include the specimen orientation, specimen size, test temperature, absorbed energy values (if required), and lateral expansion opposite the notch.

S2. Materials for High-Temperature Service

S2.1 Unless an H grade has been ordered, this supplementary requirement shall be specified for ASME Code applications for service above 1000°F [540°C].

S2.2 The user is permitted to use an austenitic stainless steel as the corresponding H grade when the material meets all requirements of the H grade including chemistry, annealing temperature, and grain size (see Section 6).

S2.3 The user is permitted to use an L grade austenitic stainless steel for service above 1000°F [540°C], subject to the applicable allowable stress table of the ASME Code, when the material meets all requirements of this specification and the grain size is ASTM No. 7 or coarser as determined in accordance with Test Methods E112. The grain size shall be reported on a Certified Test Report.

SUMMARY OF CHANGES

Committee A01 has identified the location of selected changes to this standard since the last issue (A240/A240M – 13c) that may impact the use of this standard. (Approved May 1, 2014)

(1) Added Rockwell C maximums equivalent to the Brinell Maximum listed to S31260, S32101, S32202, S32520, S32760, and S82441 in Table 2.

Committee A01 has identified the location of selected changes to this standard since the last issue (A240/A240M – 13b) that may impact the use of this standard. (Approved Nov. 1, 2013.)

(1) UNS S82012 and S82031 added to Table 1 and Table 2.

Committee A01 has identified the location of selected changes to this standard since the last issue (A240/A240M – 13a) that may impact the use of this standard. (Approved Oct. 1, 2013.)

(1) UNS S44537 and S44100 added to Table 1 and Table 2.

Committee A01 has identified the location of selected changes to this standard since the last issue (A240/A240M – 13) that may impact the use of this standard. (Approved May 1, 2013.)

(1) UNS S33550 added to Table 1 and Table 2.
(2) Ti and Al requirements for N08811 in Table 1 clarified.
(3) UNS N08925 to Table 1 and Table 2.

Committee A01 has identified the location of selected changes to this standard since the last issue (A240/A240M – 12a) that may impact the use of this standard. (Approved April 1, 2013.)

(1) In Table 2, the thickness range for which the lower minimum yield and tensile strength requirements apply was changed from "t ≥ 0.187 in. [5.00 mm]" to "t > 0.187 in [5.00 mm]" for S32003.

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SOUTH AFRICAN NATIONAL STANDARD

Hot rolled products of structural steels

Part 1: General technical delivery conditions

This national standard is the identical implementation of EN 10025-1:2004 and is adopted with the permission of CEN, rue de Stassart 36, B-1050 Brussels.

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English version

Hot rolled products of structural steels - Part 1: General technical delivery conditions

Produits laminés à chaud en aciers de construction - Partie 1: Conditions générales techniques de livraison

Warmgewalzte Erzeugnisse aus Baustählen - Teil 1: Allgemeine technische Lieferbedingungen

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Contents

Foreword

This document (EN 10025-1:2004) has been prepared by Technical Committee ECISS/TC 10 "Structural steels - Grades and qualities", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by August 2006.

This document with the Parts 2 to 6 supersedes the following documents:

EN 10025:1990 + A1:1993, *Hot rolled products of non-alloy structural steels - Technical delivery conditions.*

EN 10113-1:1993, *Hot rolled products in weldable fine grain structural steels - Part 1: General delivery conditions.*

EN 10113-2:1993, *Hot rolled products in weldable fine grain structural steels - Part 2: Delivery conditions for normalized/normalized rolled steels.*

EN 10113-3:1993, *Hot rolled products in weldable fine grain structural steels - Part 3: Delivery conditions for thermomechanical rolled steels.*

EN 10137-1:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened condition - Part 1: General delivery conditions.*

EN 10137-2:1995, *Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened condition - Part 2: Delivery conditions for quenched and tempered steels.*

EN 10155:1993, *Structural steels with improved atmospheric corrosion resistance - Technical delivery conditions.*

With resolution Nr. 2/1999 ECISS/TC 10 decided to withdraw EN 10137-3:1995 "Plates and wide flats made of high yield strength structural steels in the quenched and tempered or precipitation hardened condition - Part 3: Delivery conditions for precipitation hardened steels".

The specific requirements for structural steels are given in the following Parts:

Part 2: Technical delivery conditions for non-alloy structural steels

Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels

Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels

Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance

Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the EU Construction Products Directive (89/106/EEC).

For relationship with EU Construction Products Directive (89/106/EEC), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

1.1 This document specifies requirements for flat and long products (see Clause 3) of hot rolled structural steels excluding structural hollow sections and tubes. Part 1 of this document specifies the general delivery conditions.

The specific requirements for structural steels are given in the following Parts:

Part 2: Technical delivery conditions for non-alloy structural steels

Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels

Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels

Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance

Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition

The steels specified in this document are intended for use in welded, bolted and riveted structures.

1.2 This document does not apply to coated products or to steel products for general structural applications in accordance with the standards and draft standards listed in the Bibliography.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

2.1 General standards

EN 10020:2000, *Definition and classification of grades of steel.*

EN 10021:1993, *General technical delivery requirements for steel and iron products.*

EN 10025-2:2004, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels.*

EN 10025-3:2004, *Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels.*

EN 10025-4:2004, *Hot rolled products of structural steels - Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels.*

EN 10025-5:2004, *Hot rolled products of structural steels - Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance.*

EN 10025-6:2004, *Hot rolled products of structural steels - Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition.*

EN 10027-1, *Designation systems for steels - Part 1: Steel names, principal symbols.*

EN 10027-2, *Designation systems for steels - Part 2: Numerical system.*

EN 10052:1993, *Vocabulary of heat treatment terms for ferrous products.*

EN 10079:1992, *Definitions of steel products.*

EN 10164, *Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions.*

EN 10168, *Steel products - Inspection documents – List of information and description.*

EN 10204, *Metallic products - Types of inspection documents.*

CR 10260, *Designation systems for steel - Additional symbols.*

EN ISO 9001, *Quality management systems – Requirements (ISO 9001:2000).*

2.2 Standards on dimensions and tolerances (see 7.7.1)

EN 10017, *Steel rod for drawing and/or cold rolling - Dimensions and tolerances.*

EN 10024, *Hot rolled taper flange I sections - Tolerances on shape and dimensions.*

EN 10029, *Hot rolled steel plates 3 mm thick or above - Tolerances on dimensions, shape and mass.*

EN 10034, *Structural steel I and H sections - Tolerances on shape and dimensions.*

EN 10048, *Hot rolled narrow steel strip - Tolerances on dimensions and shape.*

EN 10051, *Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels - Tolerances on dimensions and shape.*

EN 10055, *Hot-rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions.*

EN 10056-1, *Structural steel equal and unequal leg angles - Part 1: Dimensions.*

EN 10056-2, *Structural steel equal and unequal leg angles - Part 2: Tolerances on shape and dimensions.*

EN 10058, *Hot rolled flat steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10059, *Hot rolled square steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10060, *Hot rolled round steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10061, *Hot rolled hexagon steel bars for general purposes - Dimensions and tolerances on shape and dimensions.*

EN 10067, *Hot rolled bulb flats - Dimensions and tolerances on shape, dimensions and mass.*

EN 10162, *Cold rolled steel sections - Technical delivery conditions - Dimensional and cross-sectional tolerances.*

EN 10279, *Hot rolled steel channels - Tolerances on shape, dimensions and mass.*

2.3 Standards on testing

EN 10002-1:2001, *Metallic materials - Tensile testing - Part 1: Method of test at ambient temperature.*

EN 10045-1, *Metallic materials - Charpy impact test - Part 1: Test method.*

EN 10160, *Ultrasonic testing of steel flat product of thickness equal to or greater than 6 mm (reflection method).*

EN 10306, *Iron and steel - Ultrasonic testing of H beams with parallel flanges and IPE beams.*

EN 10308, *Non destructive testing - Ultrasonic testing of steel bars.*

CR 10261, *ECISS Information Circular 11 - Iron and steel - Review of available methods of chemical analysis.*

EN ISO 377, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997).*

EN ISO 643, *Steels – Micrographic determination of the apparent grain size (ISO 643:2003).*

EN ISO 2566-1, *Steel - Conversion of elongation values - Part 1: Carbon and low alloy steels (ISO 2566-1:1984).*

EN ISO 14284, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996).*

EN ISO 17642-1, *Destructive tests on welds in metallic materials - Cold cracking tests for weldments - Arc welding processes - Part 1: General (ISO 17642-1:2004).*

EN ISO 17642-2, *Destructive tests on welds in metallic materials - Cold cracking tests for weldments - Arc welding processes - Part 2: Self-restraint tests (ISO 17642-2:2004).*

EN ISO 17642-3, *Destructive tests on welds in metallic materials - Cold cracking tests for weldments - Arc welding processes - Part 3: Externally loaded tests (ISO 17642-3:2004).*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in:

- EN 10020:2000 for classification of grades of steel;
- EN 10021:1993 for general technical delivery requirements;
- EN 10052:1993 for heat treatment terms;
- EN 10079:1992 for products forms

and EN 10025-2:2004 to EN 10025-6:2004 for other definitions apply.

4 Classification and designation

4.1 Classification

4.1.1 Main quality classes

The classification of main quality classes of steel grades in accordance with EN 10020:2000 is given in EN 10025-2 to EN 10025-6.

4.1.2 Grades and qualities

The steels for flat and long products specified in EN 10025-2 to EN 10025-6 are subdivided in grades on the basis of the minimum specified yield strength at ambient temperature.

The steel grades may be supplied in qualities which are specified in EN 10025-2 to EN 10025-6.

4.2 Designation

For the steel grades covered by this document the steel names shall be allocated in accordance with EN 10027-1 and CR 10260; the steel numbers shall be allocated in accordance with EN 10027-2.

5 Information to be supplied by the purchaser

5.1 Mandatory information

The following information shall be obtained by the manufacturer at the time of the order:

a) quantity to be delivered;

b) product form;

c) number of the relevant part of this document;

d) steel name or the steel number (see EN 10025-2 to EN 10025-6);

e) nominal dimensions and tolerances on dimensions and shape (see 7.7.1);

f) all required options (see 5.2);

g) additional requirements of inspection and testing and inspection documents as specified in EN 10025-2 to EN 10025-6.

NOTE The regulated characteristics would be declared in accordance with Annex ZA.

5.2 Options

A number of options are specified in Clause 13. In EN 10025-2 to EN 10025-6 options are specified which are specific for those parts. In the event that the purchaser does not indicate his wish to implement any of these options, the supplier shall supply in accordance with the basic specification.

6 Manufacturing process

6.1 Steel making process

The steel making process is at the discretion of the manufacturer with the exclusion of the open hearth (Siemens-Martin) process. If specified at the time of the order the steel making process of the relevant steel grade shall be reported to the purchaser.

See option 1.

6.2 Deoxidation or grain size

The method of deoxidation or the required grain size shall be as given in EN 10025-2 to EN 10025-6.

6.3 Delivery conditions

The delivery conditions shall be as given in EN 10025-2 to EN 10025-6.

7 Requirements

7.1 General

The following requirements apply when sampling, preparation of test pieces and testing specified in Clauses 8, 9 and 10 are carried out.

7.2 Chemical composition

7.2.1 The chemical composition determined by ladle analysis shall comply with the values in the relevant Table of EN 10025-2 to EN 10025-6.

7.2.2 The limits applicable for the product analysis are given in the relevant Table of EN 10025-2 to EN 10025-6.

The product analysis shall be carried out when specified at the time of the order.

See option 2.

7.2.3 For determining the carbon equivalent value the following IIW (International Institute for Welding) formula shall be used:

$$CEV = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$$

The content of the elements in the carbon equivalent value formula shall be reported in the inspection document.

7.3 Mechanical properties

7.3.1 General

7.3.1.1 Under the inspection and testing conditions as specified in Clauses 8, 9 and 10 and in the delivery condition as specified in 6.3 the mechanical properties (tensile strength, yield strength, impact strength and elongation) shall comply with the relevant requirements of EN 10025-2 to EN 10025-6.

NOTE Stress relieving at more than 580 °C or for over 1 h may lead to a deterioration of the mechanical properties of the steel grades as defined in EN 10025-2 to EN 10025-5. For normalized or normalized rolled steel grades with minimum $R_{eH} \geq 460$ MPa[1]) the maximum stress relief temperature should be 560 °C.

If the purchaser intends to stress relief the products at higher temperatures or for longer times than mentioned above the minimum values of the mechanical properties after such a treatment should be agreed at the time of the enquiry and order.

For the quenched and tempered steel grades of EN 10025-6:2004 the maximum stress-relief temperature should be at least 30 °C below the tempering temperature. As this temperature is normally not known in advance it is recommended that the purchaser if he intends to perform a post weld heat treatment to contact the steel producer.

7.3.1.2 For products ordered and supplied in the normalized or normalized rolled condition the mechanical properties shall comply with the relevant tables for mechanical properties of EN 10025-2 to EN 10025-6 in the normalized or normalized rolled condition as well as after normalizing by heat treatment after delivery.

NOTE Products can be susceptible to a deterioration in mechanical strength if they are subjected to incorrect heat treatment processes at higher temperature such as flame straightening, rerolling, etc. Products in the +N delivery condition are less sensitive than other delivery conditions, but it is recommended that guidance is sought from the manufacturer if any higher temperature processing is required.

7.3.1.3 The applicable product thickness is specified in EN 10025-2 to EN 10025-6.

7.3.2 Impact properties

7.3.2.1 Using test pieces of width less than 10 mm the minimum values given in EN 10025-2 to EN 10025-6 shall be reduced in direct proportion to the cross-sectional area of the test piece.

Impact tests shall not be required for nominal thickness < 6 mm.

7.3.2.2 The impact properties of products of certain qualities specified in EN 10025-2 to EN 10025-6 shall be verified by test only at the lowest temperature unless otherwise agreed at the time of the order.

See option 3.

7.3.3 Improved deformation properties perpendicular to the surface

If agreed at the time of the order products of the grades and qualities specified EN 10025-2 to EN 10025-6 shall comply with one of the improved deformation properties perpendicular to the surface of the product as specified in EN 10164.

See option 4.

7.4 Technological properties

7.4.1 Weldability

General requirements for welding shall be as given in EN 10025-2 to EN 10025-6.

NOTE Due to their favourable chemical composition, in comparison to a normalized steel at the same yield strength level thermomechanically treated steels according to EN 10025-4:2004 exhibit enhanced weldability.

7.4.2 Formability

General requirements for formability shall be as given in EN 10025-2 to EN 10025-6.

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[1]) 1 MPa = 1 N/mm^2.

7.4.3 Suitability for hot-dip zinc-coating

Durability is dependent on the chemical composition of the steel and can be improved if required by the application of external coatings. At the time of the enquiry and order hot-dip zinc-coating requirements, if required, shall be specified in accordance with EN 10025-2 to EN 10025-4 and EN 10025-6.

See option 5.

7.4.4 Machinability

General requirements for machinability shall be as given in EN 10025-2.

7.5 Surface properties

The surface properties shall be in accordance with EN 10025-2 to EN 10025-6.

7.6 Internal soundness

The products shall be free from internal defects which would exclude them from being used for their intended purpose.

Ultrasonic testing may be agreed at the time of the order and shall comply with 10.3.

See option 6 (for flat products).

See option 7 (for H beams with parallel flanges and IPE beams).

See option 8 (for bars).

7.7 Dimensions, tolerances on dimensions and shape, mass

7.7.1 Dimensions, tolerances on dimensions and shape shall be in accordance with the requirements given in the order by reference to the relevant documents according to 2.2.

Dimensions, tolerances on dimensions and shape of profiles not covered by a document shall be in accordance with a national standard valid in the intended place of use of the product or as agreed at the time of the enquiry and order.

7.7.2 The nominal mass shall be determined from the nominal dimensions using a volumetric mass of 7 850 kg/m^3.

8 Inspection

8.1 General

The products shall be delivered either with specific or non-specific inspection and testing as specified in EN 10025-2 to EN 10025-6 to confirm compliance with the order and this document.

8.2 Type of inspection and inspection document

8.2.1 The manufacturer shall obtain from the purchaser which of the inspection documents specified in EN 10204 is required. In these inspection documents the information groups A, B, D and Z and the code numbers C01-C03, C10-C13, C40-C43 and C71-C92 according to EN 10168 shall be included where applicable.

In the case of specific inspection, testing shall be carried out according to the requirements of 8.3, 8.4, Clauses 9 and 10.

8.2.2 Inspection of surface condition and dimensions shall be carried out by the manufacturer and may be witnessed by the purchaser if agreed at the time of the order.

See option 9.

8.3 Frequency of testing

8.3.1 Sampling

The verification of the mechanical properties shall be as specified in EN 10025-2 to EN 10025-6.

8.3.2 Test units

The test unit shall be as specified in EN 10025-2 to EN 10025-6.

8.3.3 Verification of chemical composition

8.3.3.1 The manufacturer shall report values according to the ladle analysis for each cast.

8.3.3.2 Product analysis shall be carried out if specified at the time of the order. The purchaser shall specify the number of samples and the elements to be determined.

See option 2.

8.4 Tests to be carried out for specific inspection

The tests to be carried out for specific inspection shall be as specified in EN 10025-2 to EN 10025-6.

See option 2.

See option 3.

9 Preparation of samples and test pieces

9.1 Selection and preparation of samples for chemical analysis

The preparation of samples for product analysis shall be in accordance with EN ISO 14284.

9.2 Location and orientation of samples and test pieces for mechanical tests

9.2.1 General

Requirements for the location and orientation of samples and test pieces for mechanical tests applicable for EN 10025-2 to EN 10025-6 are given in the following.

9.2.2 Preparation of samples

9.2.2.1 The following samples shall be taken from one sample product of each test unit:

– one sample for tensile testing (see 8.4.1 of EN 10025-2:2004 to EN 10025-6:2004);

- one sample sufficient for one set of six impact test pieces if the impact test is required for the quality specified in EN 10025-2 to EN 10025-6 (see 8.4.1 and 8.4.2 of EN 10025-2:2004 to EN 10025-6:2004).

9.2.2.2 The samples shall be taken as specified in EN 10025-2 to EN 10025-6.

The location of samples shall be as Annex A.

Additionally for plates, sheet, wide strip and wide flats the samples shall be taken so that the axes of the test pieces are approximately midway between the edge and center line of the products.

For wide strip and rod the sample shall be taken at an adequate distance from the end of the product.

For narrow strip (< 600 mm wide) the sample shall be taken at an adequate distance from the end of the coil and at one third of the width.

9.2.3 Preparation of test pieces

9.2.3.1 General

The requirements of EN ISO 377 shall apply.

9.2.3.2 Tensile test pieces

The requirements of EN 10002-1 as appropriate shall apply.

Test pieces may be non-proportional but in cases of dispute proportional test pieces having a gauge length $L_o = 5{,}65\sqrt{S_o}$ shall be used (see 10.2.1).

For flat products with a nominal thickness < 3 mm the test pieces shall always have a gauge length L_o = 80 mm and a width of 20 mm (test piece number 2 EN 10002-1:2001, Annex B).

NOTE For bars round test pieces are commonly used but other forms are not prohibited (see EN 10002-1).

9.2.3.3 Impact test pieces

The test pieces shall be machined and prepared in accordance with EN 10045-1. In addition the following requirements apply:

a) for nominal thicknesses > 12 mm, standard 10 mm × 10 mm test pieces shall be machined in such a way that one side is not further away than 2 mm from a rolled surface, unless otherwise specified in EN 10025-2 to EN 10025-6;

b) for nominal thicknesses ≤ 12 mm, when test pieces with reduced widths are used, the minimum width shall be 5 mm.

9.3 Identification of samples and test pieces

Samples and test pieces shall be marked so that the original products and their location and orientation in the product is known.

10 Test methods

10.1 Chemical analysis

The chemical analysis shall be carried out using appropriate documents. The choice of a suitable physical or chemical analytical method shall be at the discretion of the manufacturer. The manufacturer shall declare the test method used if required.

NOTE The list of the available documents on chemical analysis is given in CR 10261.

10.2 Mechanical tests

10.2.1 Tensile tests

The tensile test shall be carried out in accordance with EN 10002-1.

For the specified yield strength in the table on mechanical properties of EN 10025-2:2004 to EN 10025-6:2004 the upper yield strength (R_{eH}) shall be determined.

If a yield phenomenon is not present, the 0,2 % proof strength ($R_{p0,2}$) shall be determined. In case of dispute, the 0,2 % proof strength shall be used.

If a non-proportional test piece is used for products with a thickness ≥ 3 mm the percentage elongation value obtained shall be converted to the value for a gauge length $L_o = 5{,}65\sqrt{S_o}$ using the conversion tables given in EN ISO 2566-1.

In the case of plates used for the manufacture of floorplate, the elongation values only apply to the base plate and not to the final floorplate.

10.2.2 Impact tests

The impact test shall be carried out in accordance with EN 10045-1.

The average value of the three test results shall meet the specified requirement. One individual value may be below the minimum average value specified, provided that it is not less than 70 % of that value.

Three additional test pieces shall be taken from the same sample in accordance with 9.2.2.1 and tested in any one of the following cases:

- if the average of three impact values is lower than the minimum average value specified;
- if the average value meets the specified requirement, but two individual values are lower than the minimum average value specified;
- if any one value is lower than 70 % of the minimum average value specified.

The average value of the six tests shall be not less than the minimum average value specified. Not more than two of the individual values may be lower than the minimum average value specified and not more than one may be lower than 70 % of this value.

10.3 Ultrasonic testing

If specified at the time of the order (see 7.6), ultrasonic testing shall be carried out:

- for flat products in thicknesses ≥ 6 mm in accordance with EN 10160;

- for H beams with parallel flanges and IPE beams in accordance with EN 10306;
- for bars in accordance with EN 10308.

10.4 Retests

EN 10021 shall apply in respect of all retests and resubmission for testing.

In the case of strip and rod, retests on a rejected coil shall be carried out after the cutting of an additional longitudinal section of sufficient length to remove the coil end effect with a maximum of 20 m.

11 Marking, labelling, packaging

11.1 The products shall be legibly marked using methods such as painting, stamping, laser marking, bar coding, durable adhesive labels or attached tags with the following:

- the grade, the quality and if applicable the delivery condition (see EN 10025-2 and EN 10025-5) indicated by its abridged designation. The type of marking can be specified at the time of the order;

  See option 10.

- a number by which the cast and if applicable the sample can be identified (if inspection is by cast);
- the manufacturer's name or trademark;
- the mark of the external inspection representative (where applicable).

  NOTE This depends on the type of inspection document (see 8.2).

11.2 Marking shall be at a position close to one end of each product or on the end cut face at the manufacturer's discretion, but shall be so positioned as to avoid confusion with regulatory marking. Where regulatory marking also meets the requirements for this clause, this Clause will be deemed to have been satisfied without repetition of the information provided with the regulatory marking.

11.3 It is permissible to supply products in securely tied bundles. In this case the marking shall be on a label attached to the bundle or on the top product of the bundle.

12 Complaints

With regard to any claims and action arising, EN 10021 shall apply.

13 Options (see 5.2)

For products according to EN 10025-2:2004 to EN 10025-6:2004 the following options apply, if required:

1) The steel making process of the relevant quality shall be reported to the purchaser (see 6.1).
2) Product analysis shall be carried out; the number of samples and the elements to be determined shall be as agreed (see 7.2.2, 8.3.3 and 8.4.2 of EN 10025-2:2004 to EN 10025-6:2004).
3) The impact properties of a quality shall be verified at an agreed temperature (see 7.3.2.2 and 8.4.2 of EN 10025-2:2004 to EN 10025-6:2004).

4) Products of the relevant quality shall comply with one of the improved properties perpendicular to the surface of the product as specified in EN 10164 (see 7.3.3).

5) The product shall be suitable for hot-dip zinc-coating (see 7.4.3).

6) For flat products in thickness ≥ 6 mm the freedom from internal defects shall be verified in accordance with EN 10160 (see 7.6 and 10.3).

7) For H beams with parallel flanges and IPE beams the freedom from internal defects shall be verified in accordance with EN 10306 (see 7.6 and 10.3).

8 For bars the freedom from internal defects shall be verified in accordance with EN 10308 (see 7.6 and 10.3).

9) Inspection of surface condition and dimensions shall be witnessed by the purchaser at the manufacturer's works (see 8.2.2).

10) The type of marking required (see 11.1).

14 Evaluation of conformity

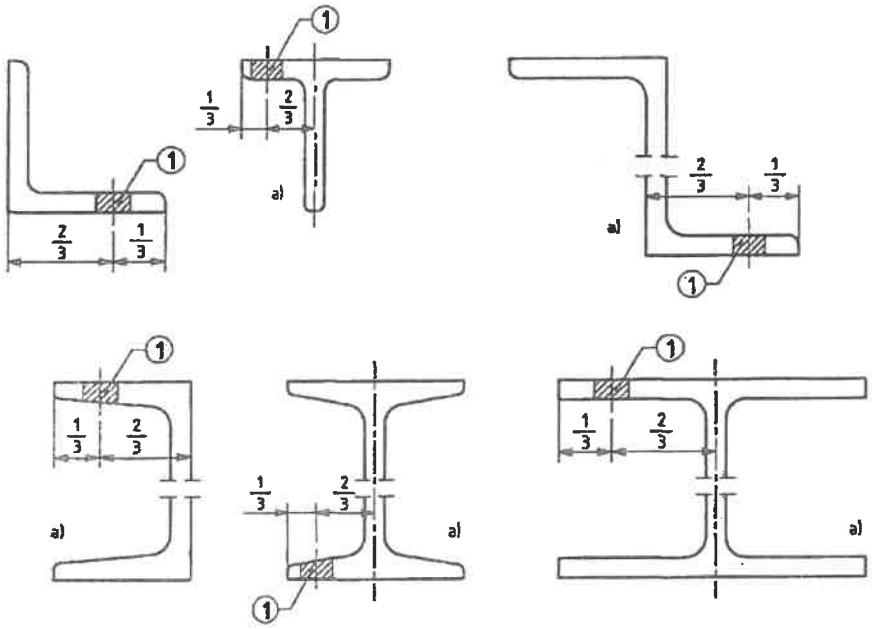
Where evaluation of conformity is required for regulatory purposes Annex B shall apply.

Annex A
(normative)

Location of samples and test pieces

The following three categories of products are covered:

- beams, channels, angles, T sections and Z sections (Figure A.1);
- bars and rod (Figure A.2);
- flat products (Figure A.3).



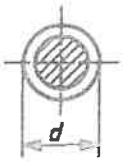
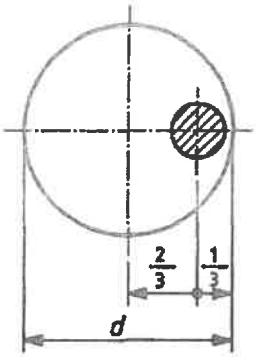
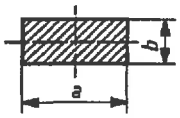
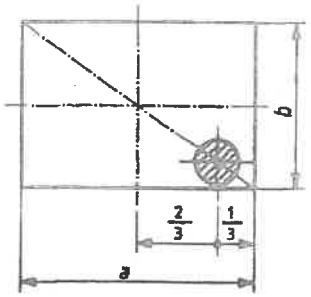
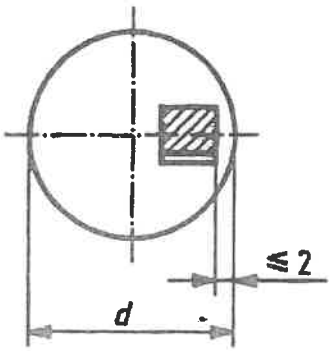
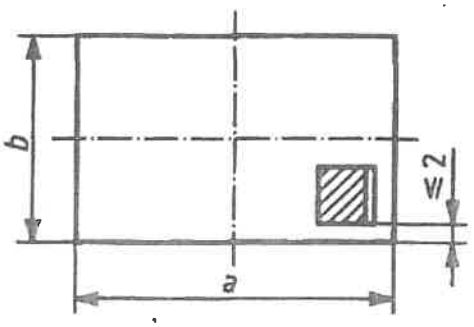
1) location of samples[b]

a) By agreement, the sample may be taken from the web, at a quarter of the total height.

b) Test pieces shall be taken from the sample as indicated in Figure A.3.
For sections with inclined flanges, machining of the inclined surface shall be permitted in order to make it parallel to the other surface.

Figure A.1 — Beams, channels, angles, T sections and Z sections

Dimensions in millimetres

Type of test	Products with round cross-section		Products with rectangular cross-section	
Tensile[a]	$d \leq 25$[a]	$d > 25$[b]	$b \leq 25$[a]	$b > 25$[b]
				
Impact[c]	$d \geq 16$		$b \geq 12$	
				

[a] For products with small dimensions (d or $b \leq 25$ mm) the test piece; if practical, shall consist of an unmachined full section of the product.

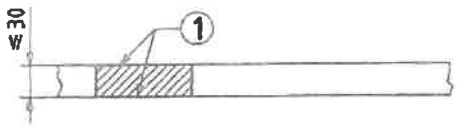
[b] For products of diameter or thickness ≤ 40 mm the manufacturer may either apply:

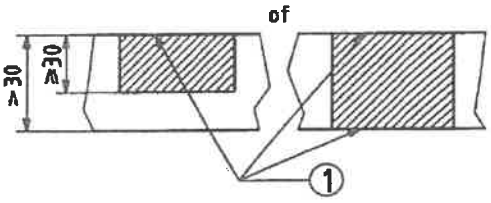
- the rules specified for products of diameter or thickness ≤ 25 mm; or
- take the test piece at a location nearer the center than indicated in the figure.

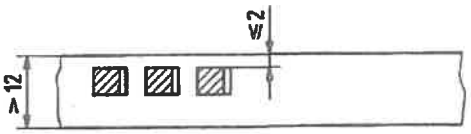
[c] For products of round cross-section, the axis of the notch is approximately a diameter; for products with rectangular cross-section, the axis of the notch is perpendicular to the greatest rolled surface.

Figure A.2 — Bars and rod

Dimensions in millimetres

<table>
<tr><th rowspan="2">Type of test</th><th rowspan="2">Thickness of product</th><th colspan="2">Orientation of the test pieces for product widths of</th><th rowspan="2">Distance of the test piece from the rolled surface</th></tr>
<tr><th>< 600</th><th>≥ 600</th></tr>
<tr><td rowspan="2">Tensile[a]</td><td>≤ 30</td><td rowspan="2">longi-tudinal</td><td rowspan="2">trans-verse</td><td> 

1) rolled surface</td></tr>
<tr><td>> 30</td><td>or
 

1) rolled surface</td></tr>
<tr><td>Impact[b], [d]</td><td>> 12[c]</td><td>longi-tudinal</td><td>longi-tudinal</td><td> 
</td></tr>
</table>

[a] In case of doubt or dispute, for products of thickness greater than or equal to 3 mm use proportional test pieces of gauge length $L_o = 5{,}65\sqrt{S_o}$.
For normal testing, for reasons of economy, test pieces of a constant measuring length may be used provided the result obtained for elongation after fracture is converted by a recognized formula (see EN ISO 2566-1).
For products of thickness greater than 30 mm a round test piece may be used with the longitudinal axis at ¼ thickness.

[b] The axis of the notch shall be perpendicular to the surface of the product.

[c] For product thicknesses ≤ 12 mm see 7.3.2.1.

[d] For products ordered according to EN 10025-3, EN 10025-4 and EN 10025-6 and for thickness ≥ 40 mm impact test pieces shall be taken from ¼ *t* position.

Figure A.3 — Flat products

Annex B
(normative)

Evaluation of conformity

B.1 General

The compliance of a steel product with the requirements of this document and with the stated values (including classes) shall be demonstrated by:

— initial type testing.

— factory production control by the manufacturer, including product assessment.

NOTE The assignment of tasks is given in Table ZA.3.

B.2 Initial type testing by the manufacturer

B.2.1 General

The initial type testing program comprises:

— intensive routine testing in accordance with B.2.2;

— supplementary testing in accordance with B.2.3.

An initial type testing program shall be carried out in accordance with B.2.2 and B.2.3 under the sole responsibility of the manufacturer of the products before they are first placed on the market. Such a program shall be carried out in each case for the steel grades with the highest requirements for tensile and impact properties which a manufacturer places on the market in accordance with EN 10025-2 to EN 10025-6.

For all products the intensive routine testing as specified in B.2.2 is required. The supplementary testing as specified in B.2.3 is additionally required for steel products delivered:

a) in the thermomechanically rolled condition with a specified minimum yield strength ≥ 460 MPa[1]) for the smallest thickness range;

b) in the quenched and tempered condition with a specified minimum yield strength ≥ 460 Mpa[1]) for the smallest thickness range;

c) in the normalized condition with a specified minimum yield strength ≥ 420 Mpa[1]) for the smallest thickness range.

Initial type testing shall be performed on first application of this document. Tests previously performed in accordance with the provisions of this document (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, initial type testing shall be performed at the beginning of a new method of production (where this may affect the stated properties).

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[1]) 1 MPa = 1 N/mm^2.

The assessment of the following characteristics is required:

— tolerances on dimensions and shape;

— elongation;

— tensile strength;

— yield strength;

— impact strength;

— weldability [chemical composition];

— durability [chemical composition].

B.2.2 Intensive routine testing

Intensive routine testing shall be specific inspection and testing in accordance with 8.4 of EN 10025-1:2004 carried out on the first five casts produced.

However, for tensile and impact testing, at least 6 products from each of the five casts shall be tested and where this is not possible test pieces shall be taken from opposite ends of the products being tested.

B.2.3 Supplementary testing

B.2.3.1 General

A supplementary testing of the product shall be carried out on the thickest range and highest grade and quality being placed on the market by the manufacturer as specified in 4.1.2 of EN 10025-1:2004 and taken from any one of the 5 casts used in the intensive routine testing (see B.2.2).

B.2.3.2 Chemical composition

A chemical content analysis shall be carried out on the product in accordance with 10.1 of EN 10025-1:2004.

The content of the following elements shall be determined and recorded: carbon, silicon, manganese, phosphorus, sulphur, copper, chromium, molybdenum, nickel, aluminium, niobium, titanium, vanadium, nitrogen and any other element intentionally added.

B.2.3.3 Tensile tests

Tensile tests shall be carried out in accordance with 10.2.1 of EN 10025-1:2004; the test method for which is the normative reference to EN 10002-1.

B.2.3.4 Impact tests

Impact tests shall be carried out in accordance with 10.2.2 of EN 10025-1:2004; the test method for which is the normative reference to EN 10045-1.

The results shall be recorded and presented in the form of transition curves showing the impact energy in Joules of one set of 3 test pieces at test temperatures of + 20 °C, 0 °C, - 20 °C, - 40 °C and at two additional test temperatures to show the ductile to brittle transition behaviour.

Where longitudinal and transverse impact tests are specified in EN 10025-2 to EN 10025-6, two transition curves shall be established, one for each orientation.

Where impact energy values are specified at more than one test temperatures, the transition curve(s) shall include all the temperatures specified in EN 10025-2 to EN 10025-6.

Individual values shall be plotted on a graph. Individual and average values shall be recorded. Impact energy values measured at test temperatures other than those specified in EN 10025-2 to EN 10025-6 shall be for information only.

Requirements on brittle fracture will be given in EN 1993.

B.2.3.5 Weldability

Where appropriate and as an indication of weldability the carbon equivalent value (CEV) shall be calculated in accordance with 7.2.3 of EN 10025-1:2004 and recorded.

The controlled thermal severity (CTS) tests, the Tekken tests or implant tests shall be carried out in accordance with EN ISO 17642 Parts 1 to 3 in order to determine the susceptibility of the steel product to hydrogen cracking in the heat affected zone of the weld. The results of the test shall be a crack/no crack criterion.

B.2.4 Documentation

The results of the initial type testing program shall be recorded and such records shall be maintained and be made available for inspection for a period of at least 10 years after the date when the last product to which the test program refers to was delivered.

B.3 Testing of samples taken at the factory by the manufacturer

The testing of samples taken at the factory by the manufacturer in accordance with a prescribed plan as specified in EN 10025-1:2004 and in accordance with the requirements of Clauses 8, 9 and 10 of EN 10025-1:2004 shall be the means of evaluation of conformity of the steel product delivered in accordance with EN 10025-2 to EN 10025-6. The reporting of such testing as carried out by the manufacturer shall be in an inspection document in accordance with EN 10204 and of a type of document as set out in Table B.1.

Table B.1 — Type of inspection document

Requirement	Inspection document
Specified minimum yield strength for the thinnest thickness range ≤ 355 MPa[a] and a specified impact energy tested at a temperature of 0 °C or 20 °C	2.2
Specified minimum yield strength for the thinnest thickness range ≤ 355 MPa[a] and a specified impact energy tested at a temperature less than 0 °C	3.1[b] or 3.2[c]
Specified minimum yield strength for the thinnest thickness range > 355 MPa[a]	3.1[b] or 3.2[c]
[a] 1 MPa = 1 N/mm^2.	
[b] Inspection document type 3.1 replaces in EN 10204:2004 type 3.1.B of EN 10204:1991.	
[c] Inspection document type 3.2 replaces in EN 10204:2004 type 3.1.C of EN 10204:1991.	

B.4 Factory production control (FPC)

B.4.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform with the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

An FPC system conforming with the requirements of EN ISO 9001, and made specific to the requirements of this document, shall be considered to satisfy the above requirements.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.

B.4.2 Equipment

Testing - All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

Manufacturing - All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

B.4.3 Raw materials

The specifications of all incoming raw materials shall be documented, as shall the inspection scheme for ensuring their conformity.

B.4.4 Product testing and evaluation

The manufacturer shall establish procedures to ensure that the stated values of all of the characteristics are maintained. The characteristics, and the means of control, are:

a) tensile test in accordance with EN 10002-1;
b) impact test in accordance with EN 10045-1;
c) chemical analysis in accordance with the standards listed in CR 10261.

B.4.5 Non-conforming products

The manufacturer shall have written procedures which specify how non-conforming products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures.

Annex C
(informative)

List of national standards which correspond with EURONORMS referenced

Until the following EURONORMS are transformed into European Standards, they may be either implemented or reference made to the corresponding national standards as listed in Table C.1.

NOTE Standards listed in Table C.1 are not supposed to be strictly similar although they deal with the same subjects.

Table C.1 — EURONORMS with corresponding national standards

EURONORM	Corresponding national standard in									
	Germany	France	United Kingdom	Spain	Italy	Belgium	Portugal	Sweden	Austria	Norway
19[a]	DIN 1025 T5	NF A 45 205	BS 4	UNE 36-526	UNI 5398	NBN 533	NP-2116	SS 21 27 40	M 3262	-
53[a]	DIN 1025 T2 DIN 1025 T3 DIN 1025 T4	NF A 45 201	BS 4	UNE 36-527 UNE 36-528 UNE 36-529	UNI 5397	NBN 633	NP-2117	SS 21 27 50 SS 21 27 51 SS 21 27 52	-	NS 1907 NS 1908
54[a]	DIN 1026-1	NF A 45 007	BS 4	UNE 36-525	UNI-EU 54	NBN A 24-204	NP-338	-	M 3260	-
ECSC IC 2	SEW 088	NF A 36 000	BS 5135	-	-	-	-	SS 06 40 25	-	-

[a] This EURONORM is formally withdrawn, but there are no corresponding EN's.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under mandate M/120 "Structural Metallic products and ancillaries" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard, shown in this annex, meet requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the construction products covered by this annex for their intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

NOTE 1 In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through

http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm).

This annex has the same scope as Clause 1 of this European Standard with regard to the products covered. It establishes the conditions for the CE marking of hot rolled structural steel products intended for the use indicated below and shows the relevant clauses applicable (see Table ZA.1).

Construction Product: Hot rolled structural steel products.

Intended uses: Metal structures or in composite metal and concrete structures.

The requirement on a certain characteristic is not applicable in those Member States where there are no regulatory requirements on that characteristic for the intended end use of the product. In this case, manufacturers placing their products on the market of these Member States are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

Table ZA.1 — Relevant clauses

Essential characteristics	Requirement clauses[a] in this (or another) European Standard	Levels and/or classes	Notes
Tolerances on dimensions and shape	7.7.1		pass/fail
Elongation	7.3.1		threshold values
Tensile strength	7.3.1		threshold values
Yield strength	7.3.1		threshold values
Impact strength	7.3.1 + 7.3.2		threshold values
Weldability (Chemical composition)	7.2 + 7.4.1		threshold values
Durability (Chemical composition)	7.2 + 7.4.3		threshold values
[a] In EN 10025-2 to EN 10025-6 the clause numbers are the same.			

ZA.2 Procedure(s) for the attestation of conformity of hot rolled structural steel products

ZA.2.1 Systems of attestation of conformity

The system(s) of attestation of conformity of hot rolled structural steel products indicated in Table ZA.1 in accordance with the Decision of the Commission 98/214/EC of 1998-03-18 as given in Annex III of the mandate for Structural metallic products and ancillaries, is shown in Table ZA.2 for the indicated intended use(s) and relevant level(s) or class(es).

Table ZA.2 — Attestation of conformity systems

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
STRUCTURAL METALLIC SECTIONS/PROFILES: hot rolled sections/profiles with various shapes (T, L, H, U, Z, I, channels, angle), flat products (plate, sheet, strip), bars.	to be used in metal structures or in composite metal and concrete structures		2+
System 2+: See Directive 89/106/EEC (CPD) Annex III.2.(ii), First possibility, including certification of the factory production control by an approved body on the basis of its initial inspection of factory and of factory production control as well as of continuous surveillance, assessment and approval of factory production control.			

The attestation of conformity of hot rolled structural steel products in Table ZA.1 shall be based on the evaluation of conformity procedures indicated in Table ZA.3 resulting from application of the clauses of Annex B of this or other European Standard.

Table ZA.3 — Assignment of evaluation of conformity tasks for hot rolled structural steel products under system 2+

Tasks			Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)		Parameters related to all relevant characteristics of Table ZA.1	See Annex B
	Initial type testing by the manufacturer		Tolerances on dimension and shape; elongation; tensile strength; yield strength; impact strength; weldability (possibly)	See Annex B
	Testing of samples taken at the factory		All relevant characteristics of Table ZA.1	See Annex B
Tasks under the responsibility of the FPC certification body	Certification of FPC on the basis of	Initial inspection of factory and of FPC	Parameters related to all relevant characteristics of Table ZA.1, in particular: Tolerances on dimension and shape; elongation; tensile strength; yield strength; impact strength; weldability; durability.	See Annex B
		Continuous surveillance, assessment and approval of FPC	Parameters related to all relevant characteristics of Table ZA.1, in particular: Tolerances on dimension and shape; elongation; tensile strength; yield strength; impact strength; weldability; durability.	See Annex B

ZA.2.2 EC certificate and declaration of conformity

When compliance with the conditions of this annex is achieved, and once the notified body has drawn up the certificate mentioned below, the manufacturer or his agent established in the European Economic Area (EEA) shall prepare and retain a declaration of conformity, which entitles the manufacturer to affix the CE marking. This declaration shall include:

- name and address of the manufacturer, or his authorised representative established in the EEA, and the place of production;
- description of the product (type, identification, use ...), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (e.g. Annex ZA of this European Standard);
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- number of the accompanying factory production control certificate;
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorized representative.

The declaration shall be accompanied by a factory production control certificate, drawn up by the notified body, which shall contain in addition to the information above, the following:

- name and address of the notified body;
- number of the factory production control certificate;
- conditions and period of validity of the certificate, where applicable;
- name of, and position held by, the person empowered to sign the certificate.

The above mentioned declaration and certificate shall be presented in the official language or languages of the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the [construction product] (or when not possible it may be on the accompanying label, the packaging or on the accompanying commercial documents (inspection document) (see Table B.1). The following information shall accompany the CE marking symbol:

- identification number of the certification body;
- name or identifying mark and registered address of the producer;
- last two digits of the year in which the marking is affixed;
- number of the EC certificate of conformity or factory production control certificate (if relevant);
- reference to this European Standard;
- description of the product: generic name, material, dimensions, ... and intended use;
- information on those relevant essential characteristics listed in Table ZA.1.1 to ZA.1.n which are to be declared presented as:
- product designation in accordance with the relevant dimensional tolerance standard according to EN 10025-1:2004, Clause 2;
- product designation (see 4.2 of the EN 10025-2:2004 to EN 10025-6:2004).

The "No performance determined" (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

Figure ZA.1 gives an example of the information to be given on the product, label, packaging and/or commercial documents.

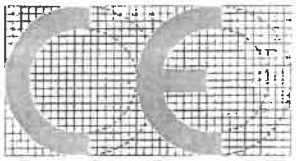 01234	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.* *Identification number of the certification body (where relevant)*
Any Co Ltd, PO Box 21, B-1050 **03** 01234-CPD-00234	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed* *Certificate number (where relevant)*
EN 10025-1 Hot rolled structural steel products. Intended uses: Building constructions or civil engineering. **Tolerances on dimensions and shape: Plate EN 10029 Class A** **Elongation** **Tensile strength** **Yield strength** : **Steel S355J0 – EN 10025-2** **Impact strength** **Weldability** **Durability: No performance determined** **Regulated substance: No performance determined**	*No. of European Standard* *Description of product* *and* *information on regulated characteristics*

Figure ZA.1 — Example CE marking information

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogations need not be mentioned.

Bibliography

[1] EN 1011-2, *Welding – Recommendations for welding of metallic materials - Part 2: Arc welding of ferritic steels.*

[2] EN 1993, *Eurocode 3: Design of steel structures.*

[3] EN 10163-1, *Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections - Part 1: General requirements.*

[4] EN 10163-2, *Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections - Part 2: Plates and wide flats.*

[5] EN 10163-3, *Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections - Part 3: Sections.*

[6] EN 10149-1, *Hot-rolled flat products made of high yield strength steels for cold forming - Part 1: General delivery conditions.*

[7] EN 10149-2, *Hot-rolled flat products made of high yield strength steels for cold forming - Part 2: Delivery conditions for thermomechanically rolled steels.*

[8] EN 10149-3, *Hot-rolled flat products made of high yield strength steels for cold forming - Part 3: Delivery conditions for normalized or normalized rolled steels.*

[9] EN 10210-1, *Hot finished structural hollow sections of non-alloy and fine grain structural steels - Part 1: Technical delivery requirements.*

[10] EN 10219-1, *Cold formed welded structural hollow sections of non-alloy and fine grain structural steels - Part 1: Technical delivery requirements.*

[11] EN 10221, *Surface quality classes for hot-rolled bars and rods - Technical delivery conditions.*

[12] EN 10225, *Weldable structural steels for fixed offshore structures - Technical delivery conditions.*

[13] EN 10248-1, *Hot rolled sheet piling of non alloy steels - Part 1: Technical delivery conditions.*

[14] EN 10249-1, *Cold formed sheet piling of non alloy steels - Part 1: Technical delivery conditions.*

[15] EN 10250-2, *Open die steel forgings for general engineering purposes – Part 2: Non-alloy quality and special steels.*

[16] EN 10268, *Cold rolled flat products made of high yield strength micro-alloyed steels for cold forming – General delivery conditions.*

[17] EN 10277-2, *Bright steel products - Technical delivery conditions - Part 2: Steels for general engineering purposes.*

[18] prEN 10293, *Steel castings for general engineering uses.*

[19] EN 10297-1, *Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions – Part 1: Non-alloy and alloy steel tubes.*

[20] ECSC IC 2 (1983)[2]), Weldable fine-grained structural steels - Recommendations for processing, in particular for welding.

[2]) Until ECSC IC 2 is transformed into a CEN Technical Report, it can either be implemented or reference made to the corresponding national standards, the list of which is given in annex C to this European Standard.

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(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Steel tubes for non-pressure purposes

Part 4: Steel tubes of round, oval, square and rectangular section for furniture

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Part 4:
Steel tubes of round, oval, square and rectangular section for furniture

1 Scope

1.1 This part of the specification cover tubes of mild steel and stainless steel of round, oval, square and rectangular section for use in the manufacture of furniture. It does not cover tubes for pressure purposes.

NOTE
a) The standards referred to in this part of the specification are listed in appendix A.
b) Requirements that must be specified by the purchaser are listed in appendix B.
c) Information regarding the verification of the quality of the steel tubes (for furniture) produced to this part of the specification and a sampling plan that could be used to assess compliance with this part of the specification of a lot of tubes for furniture are given in appendix C.

2 Definition

For the purposes of this part of the specification the following definition shall apply:

2.1
acceptable
acceptable to the authority administering this standard, or to the parties concluding the purchase contract, as relevant **Amdt 1**

3 Requirements

3.1 Material

Tubes shall be of steel of a chemical composition that complies with one of the following:

a) mild steel (cold-rolled, hot-rolled, or hot-rolled pickled and oiled) having a

   1) **carbon content** of 0,15 % max., and

   2) **sulphur and phosphorus content** of (each) 0,06 %, max., or

b) austenitic stainless steel that complies with the relevant requirements for class A, type 1 or type 2 tubes of SANS 965.

3.2 Type, grade, supply condition and physical properties of tubes

3.2.1 The type, grade, supply condition and, when determined in accordance with 5.2, the physical properties of a tube, shall be the appropriate of those given in table 1.

3.2.2 When tested in accordance with 5.3 and 5.4, a tube shall show no sign of cracking or any other such defect.

Table 1 — Type, grade, supply condition and physical properties of tubes

1	2	3	4	5	6	7
Steel	**Type designation**	**Grade**	**Yield stress MPa, min.**	**Tensile strength MPa, min.**	**Elongation %, min.**	**Supply condition**
Mild	ERW	*230	230	320	10	Direct off mill (DOM) Heat-treated
		250	250	420	25	
Stain-less	Class A Type 1	*304	310	628	30	Direct off mill (DOM)
	Class A Type 2	304	186	538	45	Heat-treated, descaled and surface-finished+

* If a tube of this grade is in the non-heat-treated condition and is subject to annealing, brazing, welding or similar heating, the physical properties of the tube will be altered in the heat-affected zone.
+ The surface finish of a stainless steel tube shall be as required (see also appendix B(e)).

3.3 Nominal size of tube, wall thickness and tolerances

The nominal size of a tube and the wall thickness shall, for a mild steel or a stainless steel tube of round section and for a mild steel tube of oval section, be the appropriate of the dimensions given in tables 2, 3 and 4, respectively. A mild steel or a stainless steel tube of square or rectangular section shall be of the appropriate dimensions given in the appropriate of tables 5, 6, 7 and 8.

NOTE
a) The approximate mass included in these tables is for information only.
b) The dimensions specified in these tables shall be measured
1) across the flats in the case of tubes of square or rectangular section;
2) across the smallest and largest dimensions in the case of tubes of oval section.

3.4 Length

Tubes shall be supplied in random lengths in the range 4 - 7 m, or, if so required, in

a) specified cut lengths (subject to a tolerance of ± 1 mm, unless otherwise agreed upon); or

b) specified "mill cut" lengths (subject to a tolerance of 0^{+50}_{-0} mm).

3.5 Straigthtness

Any deviation from straightness in a length (see 3.4) of tube shall not exceed 1 in 1 000, measured at the midpoint of the length.

Table 2 — Tubes of round section (mild steel)

1	2	3	4	5	6	7	8				
Nominal size mm	External diameter mm		Wall thickness (as required) mm				Approximate mass kg/m				
			Nominal (see column 8)	Max.	Min.		Nominal wall thickness mm				
	Max.	Min.			Hot-rolled	Cold-rolled	0,9	1,2	1,6	1,8	2,0
16	16,1	15,9					0,355	0,438	0,568	0,630	0,691
20	20,1	19,9					0,424	0,556	0,726	0,806	0,888
25	25,1	24,9	0,9		*	0,81	0,529	0,704	0,923	1,03	1,13
32	32,1	31,9	1,2	Not limited	*	1,10	0,691	0,911	1,20	1,34	1,48
38	38,1	37,9	1,6		1,45	1,47	0,823	1,09	1,44	1,61	1,78
40	40,1	39,9	1,8		1,65	1,67	0,868	1,15	1,52	1,70	1,87
50	50,1	49,9	2,0		1,82	1,87	1,09	1,44	1,91	2,14	2,37
60	60,13	59,87					1,31	1,74	2,30	2,58	2,86
70	70,13	69,87					1,53	2,04	2,70	3,03	3,35

* These thicknesses are not available in the hot-rolled condition.

Table 3 — Tubes of round section (stainless steel)

1	2	3	4	5	6	7	
Nominal size mm	External diameter mm		Wall thickness mm			Approximate mass kg/m	
						Nominal wall thickness mm	
	Max.	Min.	Nominal (see column 7)	Max.	Min.	1,2	1,6
16	16,16	15,84				0,445	0,578
20	20,20	19,80				0,564	0,736
25	25,25	24,75	1,2	Not limited	1,14	0,704	0,936
32	32,32	31,68	1,6		1,52	0,925	1,22
50	50,50	49,50				1,46	1,94

Table 4 — Tubes of oval section (mild steel)

1	2	3	4	5	6		7	8
Nominal size mm	External dimensions mm			Wall thickness mm			Approximate mass kg/m	
	d_1	d_2	Tolerance	Nominal	Max.	Min.		
30 x 16	30	16	± 0,1	1,2	Not limited	1,10	0,716	–
30 x 16	30	16	± 0,1	1,6		1,47	–	0,939

Table 5 — Tubes of square section (mild steel)

1	2	3	4	5	6	7	8
Nominal size mm	External dimensions mm		Wall thickness mm				Approximate mass kg/m
	Max.	Min.	Nominal	Max.	Min.		
					Hot-rolled	Cold-rolled	
20 x 20	20,12	19,88	1,6		1,45	1,47	0,555
25 x 25	25,15	24,85	1,6		1,45	1,47	1,224
32 x 32	32,19	31,81	1,6	Not limited	1,45	1,47	1,562
40 x 40	40,24	39,76	1,6		1,45	1,47	1,860
50 x 50	50,30	49,70	1,6		1,45	1,47	2,360
65 x 65	65,39	64,61	1,6		1,45	1,47	2,865

Table 6 — Tubes of square section (stainless steel)

1	2	3	4	5	6	7
Nominal size mm	External dimensions mm		Wall thickness mm			Approximate mass kg/m
	Max.	Min.	Nominal	Max.	Min.	
25 x 25	25,15	24,85	1,6	Not limited	1,52	1,242
32 x 32	32,19	31,81	1,6		1,52	1,585

Table 7 — Tubes of rectangular section (mild steel)

1	2	3	4	5	6	7	8	9	10
Nominal size mm	External dimensions mm				Wall thickness mm			Approximate mass g/m	
	d_1		d_2		Nominal	Max.	Min.	Nominal wall thickness mm	
	Max.	Min.	Max.	Min.				1,2	1,6
50 x 20	50,30	49,70	20,12	19,88	1,2	Not limited	1,14	1,237	1,610
50 x 25	50,30	49,70	25,15	24,85	1,6		1,52	1,329	1,860

Table 8 — Tubes of rectangular section (stainless steel)

1	2	3	4	5	6	7	8	9	10
Nominal size mm	External dimensions mm				Wall thickness mm			Approximate mass kg/m	
	d_1		d_2		Nominal	Max.	Min.	Nominal wall thickness mm	
	Max.	Min.	Max.	Min.				1,2	1,6
50 x 20	50,30	49,70	20,12	19,88	1,2	Not limited	1,14	1,256	1,634
50 x 25	50,30	49,70	25,15	24,85	1,6		1,52	1,348	1,890

3.6 Tubes of square and rectangular section

When a tube of square or rectangular section is measured in accordance with 5.1,

a) any twist in the length, measured at least 30 mm from the end of the tube, shall not exceed 2,5 mm per metre of the length (see figure 1);

b) the external dimensions resulting from any concavity/convexity of the outer surface shall not deviate from the nominal external dimensions by more than 1 %; and

c) the corner radius of the tube (see figure 1) shall not exceed 3*T* where *T* is equal to the wall thickness. The nominal internal and external radii shall be 1,5*T* and 2,5*T*.

3.7 Freedom from defects and finish

a) A tube shall be smooth, well finished and free from defects which may affect its appearance or impair its serviceability (or both). Mild steel tubes shall have a protective coating of oil. The surface finish of a stainless steel tube (mill, matt, polished or mirror finish, etc.) shall be as required.

b) Unless otherwise agreed upon, tubes shall have "mill cut" ends and any deformation caused by the cutting process shall not extend further than 30 mm from the cut.

c) If so required, the tube shall be suitable for plating[1)]

3.8 Cross-welds

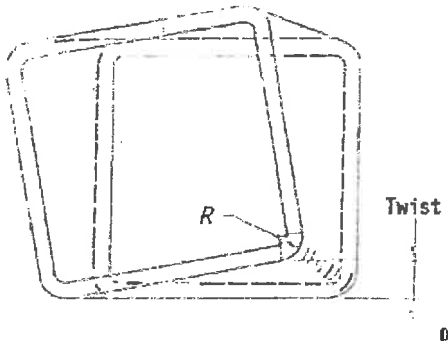
Tubes for furniture shall have no cross-welds.

3.9 Certification

When so required, the manufacturer shall supply a certificate in which it is stated that the tubes supplied against each order or contract are of the type and grade and the type of material specified in the order or contract.

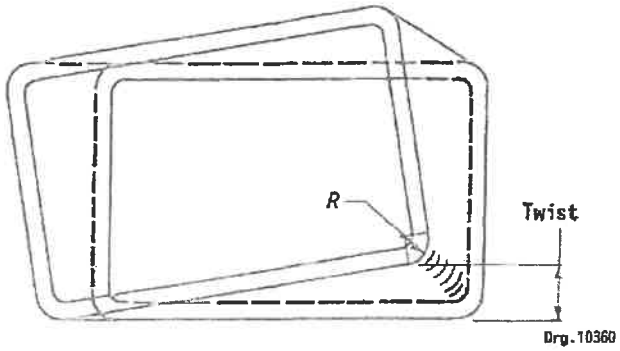
1) See SANS 135 and SANS 32/SANS 121 for further information on the suitability of steel plating.

Amdt 1



NOTE Twist to be measured at a distance of at least 30 mm from the end of the tube.

Figure 1(a) — Square section



NOTE Twist to be measured at a distance of at least 30 mm from the end of the tube.

Figure 1(b) — Rectangular section

Figure 1 — Measurement of twist

4 Packing and marking

4.1 Packing

Tubes shall be supplied loose or bundled. When supplied in bundles, only tubes of the same material, type, grade, finish, nominal length, size and wall thickness shall be bundled together

4.2 Marking

The following information shall appear in legible and indelible marking on a label securely attached to each tube or bundle (see 4.1) of tubes:

a) the manufacturer's name or trade name or trade mark;

b) the nominal size of the tubes;

c) the type and grade designation of the material.

5 Inspection and methods of test

5.1 Inspection

Visually examine and measure (using an acceptable measuring device) each tube for compliance with all the requirements of sections 3 and 4 for which tests to assess compliance are not given in 5.2, 5.3 and 5.4.

5.2 Tensile tests

Use the appropriate test methods given in SANS 6892 and check for compliance with the appropriate requirements of 3.2. (For the determination of elongation use a gauge length of 5,65 x $\sqrt{So}$ (where $\sqrt{So}$ = the original cross-sectional area)). **Amdt 1**

5.3 Flattening test (round section)

From the tube under test, cut a ring of length at least 40 mm and so place it between two parallel flat surfaces (of width at least 1,5 times the length of the ring) that the weld is centred between (and parallel to) the flat surfaces. By applying a load to one of the flat surfaces, flatten the ring until the distance between the two surfaces is 60 ± 2 % of the original external diameter of the tube. Then examine the ring for compliance with the requirements of 3.2.2.

5.4 Drift expansion test (round section)

From the tube under test, cut a ring of length at least twice the actual external diameter of the tube. Gradually force, without shock, a conical drift that has an included angle of 60 ± 1°, into the ring until the external diameter at the expanded end has been increased by 12 ± 1 %, and then examine the ring for compliance with the requirements of 3.2.2.

Appendix A

Applicable standards

(This appendix does not form part of the requirements of the specification)

Reference is made to the latest issues of the following standards:

BS 6001-1, *Sampling procedures and tables for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limits (AQL) for lot-by-lot inspection.* **Amdt 1**

SANS 135/ISO 1456 (SABS ISO 1456), *Metallic coatings – Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium.* **Amdt 1**

SANS 32/EN 10240 (SABS EN 10240), *Internal and/or external protective coatings for steel tubes – Specification for hot-dip galvanized coatings applied in automatic plants.* **Amdt 1**

SANS 121/ISO 1461 (SABS ISO 1461), *Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.* **Amdt 1**

SANS 965 (SABS 965), *Welded austenitic stainless steel tubes.*

SANS 6892/ISO 6892 (SABS ISO 6892), *Metallic materials – Tensile testing at ambient temperature.* **Amdt 1**

SANS 9001/ISO 9001 (SABS ISO 9001), *Quality management systems – Requirements.* **Amdt 1**

Appendix B

Notes to purchasers

(This appendix does not form part of the requirements of the specification)

The following requirements must be specified in tender invitations and in each order or contract:

a) Whether mild steel or stainless steel tubes are required (see 3.1).

b) The grade and type (see 3.2).

c) The nominal size and nominal wall thickness (see 3.3).

d) The length (see 3.4).

e) The type of finish for stainless steel tubes (see 3.7(a)).

f) The finish of ends, if other than "mill cut" (see 3.7(b)).

g) That a certificate be furnished (see 3.9).

Appendix C

Quality evaluation of steel tubes produced to the requirements laid down in this part of the specification

(This appendix does not form part of the requirements of the specification)

C.1 Quality verification

C.1.1 When a purchaser requires quality verification on an ongoing basis of steel tubes produced to this part of the specification, it is suggested that, rather than to evaluation of the final product only, he also direct his attention to the quality management system applied by the manufacturer. In this connection it should be noted that SANS 9001 covers the provision of an integrated quality management system. **Amdt 1**

C.1.2 If no information about the implementation of quality control or testing during manufacturing is available to help in assessing the quality of a lot, and a purchaser wishes to establish by inspection and testing of samples of the final product whether a lot (as defined in C.2.1) of steel tubes produced to this part of the specification complies with its requirements, the sampling plan given in C.2 and based on the stated AQL('s) can be applied. (If a different AQL is required, reference should be made to applicable statistical sampling tables.) **Amdt 1**

It must be noted that

a) such a sampling plan applies to fully manufactured steel tubes only; and

b) a lot that in terms of the plan is deemed to comply with the specification, could contain defective tubes to an extent proportional to that permitted by the relevant acceptance number(s) given in the sampling table.

C.2 Assessment of compliance with the specification

C.2.1 Definitions

C.2.1.1
acceptable quality level (AQL)
the maximum percentage defective that for the purpose of sampling inspection can be considered satisfactory as a process average

C.2.1.2
defective
a tube that fails in one or more respects to comply with the relevant requirement of this part of the specification

C.2.1.3
lot
not less than 50 and not more than 10 000 steel tubes of the same material; type, grade, finish, nominal length, size and wall thickness, from one manufacturer, submitted at any one time for inspection and testing

C.2.2 Sampling

Use the following sampling procedure to determine whether a lot complies with this part of the specification and deem the samples so taken to represent the lot for the respective properties:

a) **Sampling for inspection**. From the lot take at random the number of steel tubes given in column 2 of table C.1, relative to the appropriate lot size given in column 1.

b) **Sample for testing**. After inspection of the sample taken in accordance with (a) above, take from it at random the number of steel tubes given in column 4 of table C.1

Table C.1 — Sample sizes*

1	2	3	4	5
Lot size, steel tubes	Sample for inspection		Sample for testing	
	Sample size, steel tubes	Acceptance No. (AQL =.1,5)	Sample size, steel tubes	Acceptance No. (AQL = 1,5)
50 - 90	8	0	8	0
91 - 280	32	1	8	0
281 - 500	50	2	8	0
501 - 1 200	80	3	32	1
1 201 - 3 200	125	5	32	1
3 201 - 10 000	200	7	32	1

* Based on BS 6001-1 for general inspection level II (2) for inspection, and special inspection level S4 for testing.

Amdt 1

C.2.3 Criteria of compliance

Deem the lot to comply with the relevant requirements of this part of the specification if

a) on inspection of the sample taken in accordance with C.2.2(a), the number of defectives found does not exceed the relevant acceptance number given in column 3 of table C.1; and

b) on testing of the sample taken in accordance with C.2.2(b), the number of defectives found does not exceed the relevant acceptance number given in column 5 of table C.1.

SANS 657-4:2004
Edition 1.1

Table of changes

Change No.	Date	Scope
Amdt 1	2004	Amended to replace the definition of "acceptable", to update referenced standards, and to delete the reference to the standardization mark.

Abstract

Covers tubes of mild steel and stainless steel of round, oval, square and rectangular section for use in the manufacture of furniture. It does not cover tubes for pressure purposes.

Keywords

furniture, mechanical testing, pipes, steels.

Foreword

This South African standard was approved by National Committee StanSA TC 5120.03, *Ferrous metals and their products*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

This edition cancels and replaces edition 1 (SABS 657-4:1987).

A vertical line in the margin shows where the text has been modified by amendment No. 1.

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