SMS group

Manufacturing instructions
Principles

SN 200-1

ICS 03.120.01

Supersedes SN 200-1:2022-06

Table of contents

Introduction

The manufacturing requirements specified in this part of SN 200 are used to achieve the relevant SMS product quality. Consequently, these requirements must always be satisfied unless otherwise stipulated in drawings, purchase order documents, and/or other manufacturing documents. This standard is indicated as a binding document in drawings (title blocks), contracts and/or purchase order documents. If the requirements cannot be fulfilled, SMS group must be consulted.

The SN 200 series of standards comprises the following additional parts:

SN 200-2 Manufacturing instructions – Blank parts and semi-finished products
SN 200-3 Manufacturing instructions – Thermal cutting and bending
SN 200-4 Manufacturing instructions – Welding
SN 200-5 Manufacturing instructions – Mechanical processing
SN 200-6 Manufacturing instructions – Assembly and disassembly
SN 200-7 Manufacturing instructions – Corrosion protection
SN 200-8 Manufacturing instructions – Inspection
SN 200-9 Manufacturing instructions – Shipment / Transport

1 Scope

This company standard specifies basic requirements for manufacture and supply of mechanical and fluid power system products/materials.

Edited by:
SMS group Standards Office

2 Normative references

The following documents, quoted herein either in whole or in part, are required for the application of the present document. Dated references relate only to the dated edition indicated. Undated references refer to the most recent edition of the respective document including all revisions.

DIN EN 10340	Steel castings for structural uses
DIN EN ISO 286-1:2019-09	Geometrical product specification (GPS) - ISO code system for tolerances on linear sizes - Part 1: Basis of tolerances, deviations and fits
DIN EN ISO 8015	Geometrical product specification; Fundamentals – Concepts, principles and rules
DIN EN ISO 14405-1:2017-07	Geometrical product specifications (GPS) – Dimensional tolerancing – Part 1: Linear size dimensions
SN 200-8	Manufacturing instructions; Inspection
EC Directive 2014/27/EC	Directive 2014/27/EC of the European Parliament and of the Council of 26 February 2014 for amendment of Directive 92/58/EEC, 92/85/EEC, 94/33/EC, 98/24/EC and 2004/37EC

3 Safety regulations

Country-specific safety regulations must always be observed.
For components coming into contact with oxygen, it shall be ensured that they are absolutely clean from any oil and grease.
Couplings that require the input of heat (flame) in order to be disconnected must not be used for flammable fluids.

4 Hazardous substances and environmental protection

4.1 Basic specifications

Materials used in SMS group products or materials must not release hazardous substances that exceed the maximum permissible level. On the subject of hazardous substances and environmental protection, the country-specific regulations shall be complied with.

4.2 Radioactivity

All products/materials must not exhibit ionizing radiation that exceeds naturally inherent radiation levels. Ionizing radiation is considered to exceed naturally inherent radiation when a value that is higher than the ambient radiation level is measured during a test. SMS group reserves the right to refuse acceptance of products/materials found to exhibit ionizing radiation.

5 Tolerancing principle

Unless otherwise indicated on the drawings, all tolerances on dimensions, shape and position are subject to the principle of independency in accordance with DIN EN ISO 8015.
All dimensional tolerances of standard tolerance degree ≤IT9 according to DIN EN ISO 286-1:2019-09 are subject to the envelope requirement Ⓔ specified in DIN EN ISO 14405-1:2017-07.

Example: Indication on the drawing: 100+0,087 or 100H9

6 Reference surface

The marking of reference surfaces on drawings as shown in Figure 1 is an SMS group-specific stipulation. The reference surface is the blank part surface of a component that is relevant for the point of origin for dimensioning. This surface is identified on the drawings by a reference triangle and the reference letter R in a circle and must be taken into consideration in the production process.

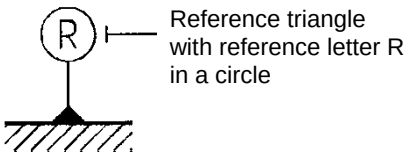


Figure 1 – Reference surface

7 Residual magnetism

The residual magnetism of all parts at the time of delivery must not exceed 800 A/m. Parts transported with lifting magnets and/or checked for surface defects with full-wave direct-current testers must be demagnetized. The residual magnetism must always be measured using an appropriate field strength meter. The examination must be verified and certified if requested by SMS group.

8 Marking of components during the manufacturing process

8.1 Basic specifications

Components made in-house and externally must be marked by the manufacturing shops/departments as specified in sections 8.2 and 8.3.
This marking is required to ensure that materials can be tracked, identified, and assigned to working papers and quality documents.

8.2 WBS number and material number

All components must always be marked with the full WBS number and material number. If the marking is removed in the course of further processing, the employee responsible must apply it in another accessible place before removing it. Labeling can also be carried out in digital form (e.g. QR code). The marking must be resistant to normal influences (e.g. water-resistant pens, tying wire with material tag, adhesive label, etc.) and it should be possible to remove it entirely using conventional tools or cleaning agents.
Annex A (for information) shows the structure of a WBS number (example for SMS group).

8.3 Serial number

In individual cases, the components must be marked with a serial number. These requirements are specified separately in the technical documentation, purchase order texts and/or manufacturing documents and must be carried out in accordance with this level of detail. For each component with a serial number, separate inspection documentation must be provided. It must be possible to trace the inspection documentation using the serial number.

8.4 Charge number

8.4.1 Stamping of the batch number for specific inspections

If a specific inspection is required, the batch number must be stamped in the place indicated on the drawing using stamping figures of at least 10 mm in height. The stamp must be applied in such a way that the number is not removed during subsequent processes, such as annealing or shot-blasting, and that it remains fully legible. The stamped batch number must be marked by drawing a colored frame around it using a tube color marker.

8.4.2 Re-stamping of the batch number for specific inspections

If the batch number is removed or becomes illegible due to other processing work during production (machining, welding, assembling etc.), the employee responsible for the processing work must ensure the serial number is retained by re-stamping it in the same place or in a different place.

9 Supplier evaluation system

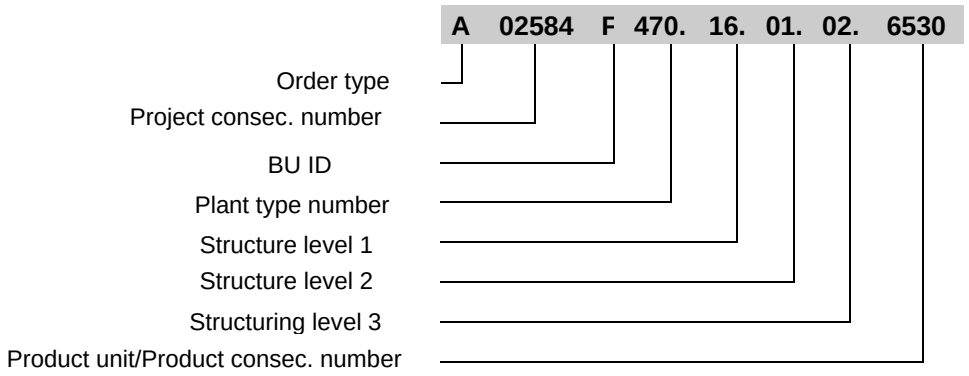
The correctness and completeness of all supplies and services are recorded by SMS group in a supplier evaluation system. This evaluation includes quality, price, compliance with deadlines and completeness of the pertaining documents, test records and certificates.

10 Publication form of SN 200

The standards of the SN 200 Manufacturing Instructions series are available in the language versions required for manufacture and delivery and is published on the SMS group intranet and on the Internet in the SMS group supplier portal.

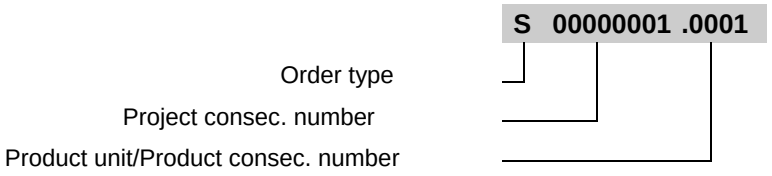
Annex A
(informative)
Structure of WBS number (example)

The WBS (work breakdown structure) element in SAP defines a supply or service to be generated or rendered within the scope of a project. An example of the structure of the WBS number at SMS group is shown in Fig. A.1, and for Technical Service in Fig. A.2.



A	=	Order execution
02584	=	JVML-HSM-SDE
F	=	Flat rolling mills
470	=	HSM
16	=	Coiler area
01	=	Coiler unit 1
02	=	Coiler 1
6530	=	Coiler mandrel

Fig. A.1 – Example of a WBS number from the Hot/Cold Mills business unit



S	=	Technical Service
00000001	=	Project consec. number
0001	=	Product from Technical Service

Fig. A.2 - Example of a WBS number from the Technical Service Business Unit

References

SN 200-2	Manufacturing instructions – Blank parts and semi-finished products
SN 200-3	Manufacturing instructions – Thermal cutting and bending
SN 200-4	Manufacturing instructions – Welding
SN 200-5	Manufacturing instructions – Mechanical processing
SN 200-6	Manufacturing instructions – Assembly and disassembly
SN 200-7	Manufacturing instructions – Corrosion protection
SN 200-8	Manufacturing instructions – Inspection
SN 200-9	Manufacturing instructions – Shipment / Transport

Revisions

Amendments made in comparison with SN 200-1:2022-06:

Editorial revision:	Title changed to "principles". Section structure changed. SN 200-9 added in the introduction and the references.

Previous editions

SN 200:1971-09, 1975-11,1978-01, 1981-01,1985-01, 1992-03, 1996-03, 1999-09, 2003-09, 2007-02, 2010-09
SN 200-1:2016-05, SN 200-1:2022-06