I N T E R S T A T E S T A N D A R D

STEEL BUILDING STRUCTURES

General Specifications

Official Edition
English Version Approved by Interstandard

INTERSTATE SCIENTIFIC-AND-TECHNICAL COMMISSION ON STANDARDIZATION, TECHNICAL NORMALIZATION AND CERTIFICATION IN CONSTRUCTION (ISTCS)
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Foreword

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Votes in favor:

State	Name of state body for construction
Republic of Armenia	Ministry for Town-Planning of Republic of Armenia
Republic of Kirghizia	State Architectural-Construction Inspection under the Government of Republic of Kirghizia
Republic of Moldova	Ministry for Territorial Development, Construction and Municipal Services of Republic of Moldova
Russian Federation	Gosstroy of Russia
Republic of Tadjikistan	Gosstroy of Republic of Tadjikistan

3 IN PLACE OF GOST 23118-78, GOST 4.253-80, SNiP (Construction Norms and Regulations) III-18-75

4 INTRODUCED from January 1, 2001 as the state standard of the Russian Federation by Decree No. 39, dated 19.10.99, of Gosstroy of Russia

Content

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STEEL BUILDING STRUCTURES

General Specifications

Date of introduction: 01.01.2001

1 Scope

This Standard applies to steel building structures made from steels of grades not higher than C440 for buildings and installations of various purpose (hereinafter referred to as structures) intended for application in any climatic areas with seismicity up to 9 points inclusive and establishes the general requirements for these structures.

The requirements of this Standard shall be applied during the development of new and revision of acting standards in the form of specifications for steel building structures of various purpose, the development of working documentation including, if necessary, specifications (TU) for manufacturing and delivering steel building structures of particular types and grades, as well as directly during the delivery, under single orders, of steel building structures of individual and small-scale manufacture if specifications and standards for them are not developed.

This Standard does not apply to structures, which play a role of technological equipment (steel building structures of blast furnaces and air heaters, tanks and gas holders, radiating structures of aerial installations, mining headwork, structures of hoisting-and-transport equipment and lifts, main and technological pipelines), as well as a role of railway and road bridges and hydraulic engineering constructions.

The obligatory requirements for quality of steel building structures are stated in Sections 4 (except for 4.12.2, 4.13 and 4.14), 5 and 6 of this Standard.

Official Edition

2 Normative references

The references to normative documents, which are listed in Appendix A, are used in this Standard.

3 Classification, key parameters and dimensions

3.1 Steel building structures are classified depending on:

- purpose;
- type of joints;
- fabrication degree;
- building and operating conditions;
- criticality of application.

3.1.1 Regarding purpose the structures are subdivided into:

- bearing (primary and accessory);
- shielding;
- those with combined functions of bearing and shielding.

3.1.2 Regarding type of joints the structures are subdivided into:

- welded;
- bolt (including high-strength bolts with frictional joints);
- riveted;
- screw;
- combined.

3.1.3 Regarding degree of fabrication the structures are subdivided into:

- completely made by the manufacturer (in workshops);
- made by the manufacturer (in workshops) as dispatch units (elements) and combined during assembly.

3.1.4 Regarding building and operating conditions the structures are subdivided depending on:

- type of force effect;
- degree of hostile environment;
- temperature conditions;
- character of operation.

3.1.4.1 Regarding type of force effect the structures are subdivided into:

- taking-up constant and temporary loads and influences;

- taking-up, except for constant and temporary loads, special loads such as mobile, vibrating, explosive and seismic loads.

3.1.4.2 Regarding degree of hostile environment the structures are subdivided into operating in:

- non-hostile environment:
- weakly hostile environment;
- medium-hostile environment:
- highly hostile environment.

The classification of environment depending on degree of hostile environment to steel building structures is established in accordance with SNiP 2.03.11.

3.1.4.3 Regarding temperature conditions the structures are subdivided into:

- built or operated in regions with calculated temperature from -40 °C and higher;
- built or operated in regions with calculated temperature from -40 °C to -50 °C inclusive;
- built or operated in regions with calculated temperature lower than -50 °C to -65 °C inclusive;
- subjected to temperature effects of 100 to 150 °C;
- operated in heated buildings and installations;
- operated in non-heated buildings and installations.

3.1.4.4 Regarding character of operation the structures are subdivided into:

- stationary;
- mountable-dismountable;
- mobile.

3.1.5 Regarding criticality of application depending on the dangerous consequences caused by structure failures the structures are subdivided into those, whose failure:

- can cause the full operative unfitness of building or installation as a whole or in its significant part;
- can cause difficulties in the normal operation of building or installation;
- does not infringe the operation of other structures or their elements.

3.2 The key parameters and dimensions of structures shall be specified in the standards or design documentation for particular structures. The conditional designation of structures shall be assigned in accordance with GOST 26047.

4 General technical requirements

4.1 The structures shall be manufactured in accordance with the requirements of this Standard, standards or specifications for products of specific kinds, types and grades using the working documentation approved by the developer and implemented to manufacture by the manufacturer.

The working documentation for a structure shall be developed in accordance with the active building norms and regulations. The manufacturing technology shall be regulated by the technological documentation approved by the manufacturer in accordance with the established procedure.

4.2 The structures shall meet the requirements for bearing ability (strength and rigidity) that are established during designing and, in cases stipulated by the standards or specifications, withstand control loads when tested by loading.

The working drawings of products shall define the loading procedures, destructive control loads, control loads for rigidity tests and control deflection.

If there are no requirements for tests of structures by loading, the structure durability and rigidity shall be provided by meeting the established requirements for grades of steel, as well as the requirements for strength characteristics and geometrical parameters of structure and their constructive elements, the requirements for welded, bolt and other joints, and, if necessary, the requirements for other elements and parts of structures depending on the character and conditions of their operation.

4.3 The structures shall be resistant to temperature and other calculated influences, to which they may be exposed while in service.

The types and characteristics of heaters, which meet the requirements of SNiP 11-3 for thermal protection, shall be specified in the working drawings of shielding structures operating in heated buildings and installations.

The structures, when affected by open flame during a fire, shall maintain, depending on their type, the bearing ability and (or) integrity and, in necessary cases, heat-shielding ability during the established period of time. The limit of fire resistance and class of fire danger shall be determined on the basis of structure tests and specified in the working documentation.

4.4 The structures shall be protected from corrosion by methods specified in the design documentation, in accordance with the requirements of SNiP 2.03.11.

The terms of renewing protective coatings shall be specified in the standards, specifications or design documentation for structures of specific types.

4.5 The coatings shall be applied on a structure in workshops.

It is permitted to apply coatings directly in the process of installing structures:

- when repairing portions of protective coating damaged during transportation, storage or installation;
- when applying color marking;
- when painting out factory marks;
- when agreed with the customer.

4.6 The mounting joints by high-strength bolts fixed with controllable tension and areas of welding 100 mm wide from both weld sides shall not be primed, painted and metallized in workshops.

4.7 The surface quality of structures cleaned from fatty contamination shall comply with the second degree of surface degreasing in accordance with GOST 9.402.

The degree of structure surface clearing from oxides shall comply with SNiP 2.03.11.

4.8 The paint and varnish coatings of bearing structures with respect to appearance parameters shall comply with classes in accordance with GOST 9.032 as follows:

IV-V	- for structures operating in medium-hostile and highly hostile environment;
from V to VI	- for structures operating in weakly hostile environment;
up to VII	- for structures operating in non-hostile environment.

4.9 Requirements for materials

The standards or specifications for design of specific types shall provide for the use of structure and joint materials, the requirements for which are established in the design documentation developed in accordance with SNiP 11-23.

The materials shall meet the requirements of the standards or specifications for their manufacturing.

4.10 Requirements for welded joints

4.10.1 The welding of steel building structures shall be carried out in accordance with the developed technological process, which has been made out as typical or special technological instructions, or under the project of welding work performance (PWWP).

4.10.2 The mechanical properties of welded joint metal determined on the basis of test results in accordance with GOST 6996 shall comply with the following requirements:

- ultimate resistance to rupture of welded joint metal shall not be lower than the values specified for the basic metal;

- hardness of welded joint metal (weld, thermally affected zone) when welding steel building structures in workshops shall be not higher than 350 HV for structures of 1-st group in accordance with the classification of SNiP 11-23 and not higher than 400 HV for structures of other groups; when welding structures in assembly conditions the hardness of welded joint metal shall not be higher than 350 HV;

- impact strength determined using samples of VI type at a daily average temperature of external air in the coldest five-day period, specified in the project, shall be not lower than 29 J/cm^2 except for joints performed by electroslag welding;

- relative elongation shall not be lower than 16 %.

Notes

1 The metal of butt or tee joints with fused edges shall be tested for impact strength.

2 When testing the metal in the border of fusion for impact strength, the norm may be lower, but no more than by 5 J/cm^2.

3 If it is necessary to determine impact strength using samples of other types, the respective values shall be specified in the design documentation.

4.10.3 Deviations of weld dimensions from design dimensions shall not exceed the values specified in GOST 5264, GOST 8713, GOST 11533, GOST 11534, GOST 14771 and GOST 23518. The dimensions of angular weld shall provide its working cross-section defined by the calculated value of cathetus considering the maximum permissible dimension of space between welded elements; in case of calculated angular welds, the excess of above space shall be compensated by the increase in the cathetus of weld.

4.10.4 The welds of welded joints and structures upon termination of welding shall be cleared of slag, metal spray and laps. The welded assembly adaptations and led-out rods shall be

removed without striking and damaging the basic metal, and the place of their welding shall be cleaned off to the basic metal and all defects shall be removed.

4.10.5 The number or sign of the welder, who has performed the weld, shall be put near the weld of welded joint. The number or sign shall be applied at a distance not less than 4 cm from the border of weld if there are no other instructions in the design or technological documentation. When welding assembly unit by one welder, it is permitted to make marking for the whole unit; in this case the sign of welder shall be applied near the dispatch marking. When welding in assembly conditions, it is permitted to mark welds in the performance drawings.

4.10.6 Depending on constructive make-out, conditions of operation and degree of criticality the welds of welded joints are subdivided into categories I, II and III, which correspond to the high, medium and low level of quality. The characteristics of categories and quality levels are given in table 1 and Appendix Б.

Table 1

Category and quality level of welds of welded joints	Type of welds of welded joints and the characteristic of conditions of their operation
I - High	1. Transverse butt welds that take up stretching stress $\sigma_p > 0.85A$, (in stretched belts and walls of beams, elements of framework, etc.). 2. Welds of tee, angular and lap joints that take up breaking stress when stretching stress $\sigma_p \geq 0.85\ R_y$ is applied to the attached element and cutting stress in a weld is $\tau_{уш} \geq 0.85R_{wf}$. 3. Welds of structures or their elements complying with the 1-st group according to the classification of SNiP 11-23, as well as the welds of structures complying with the 2-nd group for climatic areas of building with a calculated temperature below -40 °C (except for cases related to types 7 to 12)
II - Medium	4. Transverse butt welds that take up stretching stress $0.4R_y \leq \sigma_p \leq 0.85R_y$, as well as the welds of tee, angular and lap joints taking up breaking stress when stretching stress $\sigma_p \geq 0.85\ R_y$ is applied to the attached element and cutting

Continuation of table 1

Category and quality level of welds of welded joints	Type of welds of welded joints and the characteristic of conditions of their operation
II - Medium	stress in a weld is $\tau_{уш} < 0.85R_{wf}$ (except for cases related to type 3). 5. Calculated angular welds that take up cutting stress $\tau_{уш} \geq 0.75R_{wf}$ and connect basic elements of structures complying with the 2-nd and 3-rd groups (except for cases related to types 2 and 3). 6. Longitudinal butt welds that take up stretching or shifting stress $0.4R \leq \sigma \leq 0.85R$. 7. Longitudinal (binding) angular welds of basic elements of structures complying with the 2-nd and 3-rd groups that take up stretching stress (belt welds of combined-section elements, welds of stretched elements of frameworks, etc.). 8. Butt and angular welds for attaching central shaped parts, connecting shaped parts, supports, etc. to stretched zones of structure basic elements.
III - Low	9. Transverse butt welds that take up compressing stress. 10. Longitudinal butt welds and binding angular welds in the compressed elements of structures. 11. Butt and angular welds for attaching shaped parts to the compressed elements of structures. 12. Butt and angular welds in accessory elements of structures (structures complying with the 4-th group)
Conditional designations: σ_p – stretching stress applied to the metal of weld; R_y - resistance of steel to stretching, compression and bend calculated basing on the yield limit; $\tau_{уш}$ – tangent stress applied to the metal of angular weld; R_{wf} - resistance of angular welds to (conditional) cut calculated basing on the metal of weld; σ - stress applied to the metal of weld; R - calculated resistance of weld metal.	

4.10.7 The following information shall be specified in design documentation:

- welded joints requiring the ultrasonic inspection, radiographic inspection, as well as mechanical tests;
- methods and volumes of inspection;
- required quality level of welded joints.

4.10.8 When visually inspected, the welded welds shall meet the following requirements:

а) The surface shall be smooth or uniformly scaly and without sharp transitions to basic metal (the requirement for smooth transition to basic metal shall be specially proved and ensured with additional technological methods);

б) The welds shall be dense over the whole length and not have visible burns, narrowing, breaks, inflows, as well as undercuts of inadmissible dimension, incomplete fusion in the weld root, incomplete fusion of edges, slag inclusions and pores;

в) The metal of weld and weld-adjacent zone shall not have cracks of any orientation and length;

г) The craters of welds in places of welding stop shall be overdone, and the craters of welds in places of welding termination shall be welded up.

4.11 Requirements for apertures under bolt and riveted joints

4.11.1 The nominal diameters of apertures for bolt joints of various kinds in classes of accuracy A, B and C in accordance with GOST 1759.0, as well as the nominal diameters of high-strength bolts in accordance with GOST 22353 and GOST 22356 shall be chosen in accordance with SNiP 11-23 and the design documentation.

4.11.2 The apertures shall be made by drilling or punching by the manufacturer, except for cases stipulated in the design documentation.

4.11.3 Maximum deviations of aperture diameters from calculated ones depending on fabrication method and type of bolt joint are given in table 2.

4.11.4. The control and general assembly of structures with bolt joints shall be carried out by the manufacturer, if it is stipulated in the design documentation.

Table 2

Deviation	Diameter of aperture, mm	Permissible deviation, mm	Permissible amount of deviations in each group of apertures for steel	
			C235-C285	C345-C440
Deviations of drilled and punched aperture diameter for rivets and bolts and their ovalness	Up to 17 More than 17	0; +0.6 0; +1.5	Not limited	
Bevels more than 1 mm in dimension and edge cracks of apertures	—	—	Not permitted	
Obliquity (inclined axis) up to 3 % of package thickness, but no more than 2 mm for machine riveting and 3 mm for manual pneumatic riveting	—	—	Not limited	Up to 20 %
Obliquity (inclined axis) up to 3 % of package thickness for bolts	—	—	Not limited	
Obliquity of greater values	—	—	Not permitted	
Deviation of countersink depth	—	±0.4	Not limited	
Note – The diameter of punched apertures from die side shall not exceed the nominal diameter of aperture more than by 1.5 mm.				

4.12 Accuracy in the manufacture of structure elements and structure mounting (assembly) pieces (products)

4.12.1 Maximum deviations of structure geometrical parameters (structure elements, products, assembly units) shall comply with the values specified in the design documentation, standards or specifications for structures of specific type.

The accuracy of geometrical parameters shall be calculated in accordance with the normative documents of the System for ensuring the

accuracy of geometrical parameters in construction (GOST 21778, GOST 21779 and GOST 21780) depending on the functional allowances, required level of structure assembly suitability during the installation and manufacturing considering constructive, as well as technological opportunities of manufacturing and installation.

4.12.2 The recommended values of maximum deviations from the calculated values in building and installation skeletons are given in Appendix B.

4.13 Completeness and terms of delivery

4.13.1 The structures shall be delivered to the consumer as a complete set.

4.13.2 The composition of complete set delivered by the manufacturer shall be specified in the standards, specifications or design documentation for structures of specific types.

The complete set shall include: structures, design documentation allowing to perform the installation and operation of structures, as well as the quality certificate (passport) of structures.

4.13.3 The composition of complete set (volume, procedure of structure delivery, quality certificate (passport) and accompanying design documentation, detail degree of design documentation, delivery of spare structures, materials, linings, fastening units, etc.) shall be specified in the agreement (contract) for the delivery of structures.

4.13.4 When assigning the overall dimensions of structures, it is necessary to provide for the possibility of their dividing into dispatch elements considering the technological manufacturer’s capabilities and consumer’s hoisting-and-transport equipment, as well as the conditions of transportation. The division of structures into dispatch elements and blocks shall meet the following requirements:

- the dispatch element or block shall keep the calculated geometrical dimensions and form when cargo handling and transportation;

- the element or block shall have adaptations for slinging during unloading, loading and integrating assembly during the installation, as well as for mounting platforms and ladders; it shall be completed with mounting parts for fastening structures in the designed position;

- the overall dimensions of structure element or block transported by railway, shall meet the railway overall dimensions;

- the overall dimensions of structure element or block transported by road shall meet the requirements of state bodies for traffic safety.

4.14 Marking

4.14.1 Depending on purpose, the marking of structures and their elements may be operational, general, individual and orienting.

4.14.2 The operational marking shall be applied on structure parts and elements during performing all operations on manufacturing the structure in accordance with the technological documentation. The operational marking, as a rule, is not left on the finished structure, except for cases when such requirement is established in the design documentation, specifications or standards for structures of particular type.

4.14.3 The general marking shall be applied on each structure. The general marking shall include grade in accordance with GOST 26047.

It is permitted to mark structures with the trade mark or brief name of the manufacturer.

It is permitted to mark structures with a certain color strip 5 cm wide for each order when the manufacturer delivers structures under two or more orders to one address.

4.14.4 It is necessary to apply individual marking on the structures that past the general and control assembly. The individual marking shall contain:

- general marking;

- additional marking related to the assembly scheme.

4.14.5 It is necessary to apply orienting marking on structures, whose installation requires the information about its proper orientation in space.

The orienting marking shall be applied only if there are respective instructions in the design documentation and the structures past control and general assembly.

4.14.6 It is necessary to apply orienting marking in addition to the general or individual marking and it shall contain marking signs indicating: the place for slinging, place for

supporting and structure installation marks specified in the design documentation.

The place for supporting and structure installation marks shall be indicated as indentation lines 5 mm long.

4.14.7 The marking inscription may be done as a line or column depending on the structure dimensions.

4.14.8 It is necessary to apply marking in two places and locate them in a visible place accessible to review and reading during storage, installation and, if necessary, operation and repair.

4.14.9 The location of marking on a structure shall be specified in the standards, specifications or design documentation for structures of particular type in accordance with GOST 2.314.

4.14.10 If it is impossible to apply marking inscriptions because of structure small dimensions, it is permitted to apply marking without indicating the order and drawing numbers; in this case the structures shall be stacked in a box or winded in a bundle. The tag indicating the number of order, number of drawing and quantity in the box or bundle shall be attached to the box or bundle.

4.14.11 The marking shall be established in the standards, specifications or design documentation for structures of particular type and applied by one of the following methods:

painting by cliche;

alphanumeric stamping in accordance with GOST 25726;

indentation;

fastening a metal tag with marking made by alphanumeric stamping to a product.

It is permitted to paint legible marking by hand.

The marking made by alphanumeric stamping shall be encased with paint in a form of frame.

4.14.12 The marking by cliche shall be made with a paint, whose color is contrast to the structure background.

4.14.13 It The marking shall be made with a font of 10, 15, 30, 50 and 100 mm in height in accordance with GOST 14192.

4.14.14 Provided the fulfillment of conditions and periods of storage established in the normative documentation, the marking shall be visually readable during the storage and installation.

The marking by alphanumeric stamping, indentation or fastening a metal tag shall provide the constancy of inscriptions during the whole service

life of product when operated in all conditions and modes established in the standards, specifications and design documentation.

4.14.15 The fastening of metal tags to a structure shall exclude a possibility of forming active galvanic pairs. The dimensions of tags shall be in accordance with GOST 14192.

4.14.16 The transport marking of products shall be in accordance with GOST 14192.

4.14.17 If the design documentation, standards or specifications provide for marking structure calculated parts, it shall be applied by indentation and include the number of metal heat.

4.15 Packing

4.15.1 The packing of structures shall be made in a way that prevents the changes of geometrical form and deformation, as well as provides the constancy of structure preventive coating when loading, unloading and storage.

4.15.2 The packaging shall be used as the basic form of packing structures for transportation and storage.

4.15.3 The packaging shall be used for packing structures, parts and assembly units (products) of small rigidity and stability:

plane trellised structures;

beams (under-crane beams, beams of pendant transport, ceiling beams);

structure elements for shielding buildings and others elements that allow packaging.

Separate packages of structures shall be made or combined as transport units.

4.15.4 The formation of transport packages shall be made using similar products or packages related to the same order and drawing or using heteronymic dispatch elements or packages related to the same order.

4.15.5 The transport packages of products shall provide:

- possibility of mechanized loading and unloading vehicles;

- stability of form and dimensions, preservation of structures during transportation, loading, unloading and storage;

- stability of each package separately and the possibility of staking in two layers and more, except for packages of trellised elements and curvilinear sheet structures;

- accessibility for checking the quantity of products and their marking in a package;

- safety of package formation, loading and unloading, as well as the possibility of element-by-element separation of package;

- reliability and convenience when transported by vehicles in accordance with the effective regulations for the given type of transport.

4.15.6 The products (completing parts, fastening units, overlays, assembly and mounting adaptations, etc.) with small weight and dimensions up to 1.5 m shall be packed into box pallets (with or without a cover, with solid or trellised walls) made according to the manufacturer's drawings approved by the established procedure. The packing of high-strength bolts shall be performed in accordance with GOST 22356 and GOST 18160. It is permitted to deliver completing parts in packing and containers of the supplier.

4.15.7 The maximal dimensions of packages and box pallets shall meet, when transported by railway, road, air and sea, the requirements of the effective regulations for respective types of transport approved by the established procedure.

4.15.8 The mass of transport package shall be no more than 20 t, if other mass is not provided for in the order. In this case the mass of package being more than 20 t shall be agreed between the consigner and the consignee. In case of package overload it is necessary to coordinate with the station (place) of reloading along the routing if the mass of package is more than 10 t.

4.15.9 When using mixed transportation, the overall dimensions and mass of packages and box pallets shall not exceed the smallest values specified in the regulations for respective types of transport in view of requirements established in 4.15.4.

4.15.10 The mass of packaging means and box pallets shall be as minimal as possible. The bearing and non-bearing elements of packaging means shall be calculated using building norms and rules for designing structures taking into account the mass of packaged structures, as well as the loads arising during loading, unloading and transportation of cargo by vehicles.

4.15.11 The bearing elements of packaging means shall be provided with adaptations for package slinging and fastening on vehicles. The apertures in components of packaging means shall be not less than, mm:

70 for slinging; 30 for fastening.

4.15.12 The following shall be used for the fabrication of packaging means:

- shaped (hot rolled, cold bent) products and steel rolled sheets;
- bolt and welded joints;
- general purpose thermally processed mild steel wire with a diameter not less than 6 mm.

4.15.13 In order to preserve the protective coating of structures in places of contact with other structures and packaging means, it is necessary to lay and fix linings made of wood, cardboard, plastic and other materials, providing that they do not drop out.

4.15.14 The means of cargo securing in transport packages shall be in accordance with GOST 21650.

4.15.15 The packages of products, as well as box pallets shall be marked in accordance with GOST 14192.

5 Acceptance procedure

5.1 All delivered structures shall be accepted by the technical control department of the manufacturer.

5.2 When accepting structures, it is necessary to assess the conformity of all structure parameters to the requirements of:

- this Standard;
- the standards or specifications for particular structures;
- the design documentation.

5.3 When accepting structures of mass production, the volumes of batches, methods and control plans (including sample volumes) shall be as established in the standards or specifications for particular structures.

5.4 When accepting structures of individual and small-scale production, the volumes of batches, methods and control plans (including sample volumes) shall be as established in the design documentation for particular structures.

5.5 The conformity of structure quality parameters and technological mode parameters to the requirements of documents specified in 5.2 shall be assessed by the results of incoming, operational and acceptance control using product indicators and procedures given in table 3.

Table 3

Type of control	Controllable parameters or procedure
1 Incoming	Quality of completing products, initial materials and intermediate products (class and grade of steel, assortment and geometrical dimensions of rolled products, grade of paint and varnish, welding materials and materials of anticorrosive coatings; quality of gases for welding and cutting metal, classes of bolts and nuts, etc.)
2 Operational	Geometrical parameters of patterns, conductors and other elements of equipment Geometrical parameters of parts and intermediate products including parameters received after machining Assembly of structures or their elements for welding Quality of welded and bolt joints Quality of separately manufactured elements to be included in a structure Geometrical parameters of structures Quality of anticorrosive coatings including surface preparation, as well as the quality of first and other coating layers
3 Acceptance	
3.1 Periodic inspection and tests	Parameters of technological mode in manufacturing operations Check of technological process stability in manufacturing operations and the check of volume sufficiency during incoming and operational control Assembly suitability of structures on the basis of control assembly Bearing ability and rigidity of structures
3.2 Handing-over control	Check of documentation availability concerning incoming and operational control and the documentation conformity to the approved technological documentation Geometrical parameters of structures that may affect the assembly of structures Visual inspection of structures Sampling control of anticorrosive protection, welds and other requirements of the standard, specifications and design documentation Completeness, marking, packing

Notes

1 The checks of structure bearing capability and rigidity shall be carried out as handing-over tests if they are provided for by the standards, specifications and design documentation for specific types of structures.

2 The procedure for the external examination of structures provides for the visual inspection against the requirements of the standard in order to reveal the places of possible structure defects.

It is permitted to specify the list of these parameters and procedures depending on the type of controllable products and manufacturing specificities in the standards, specifications and design documentation for design of structures of specific types, as well as in the technological documentation.

The results of incoming, operational and acceptance control shall be entered into respective logs of technical control department and laboratory or other documents.

The parameters, which are subject to inspection and registration in the above documents, shall be accepted in accordance with the technological and design documentation for structures.

5.6 Incoming control

5.6.1 The incoming control of materials and completing parts shall be carried out in accordance with GOST 24297.

5.6.2 If the standards or specifications for the design of mass production structures and the design documentation for structures of individual or small-scale production establish the requirements for incoming quality control of materials and completing products, it shall be performed by the certificated laboratory or laboratory of the structure manufacturer.

In this case the acceptance procedures and quality monitoring stipulated by the standards or specifications of the supplier shall be used.

5.7 Operational control

5.7.1 The operational control shall be carried out in accordance with the technological documentation of the manufacturer. The control volume shall be sufficient for the assessment of operation quality with respect to the fulfillment of requirements established in the standards or specifications and design documentation for structures.

5.7.2 The composition of controllable attributes, quantity of attributes to be controlled, as well as the accuracy and stability of technological mode parameters in manufacturing operations shall be chosen basing upon the technological documentation of the manufacturer developed in accordance with the standards of the Single system for manufacture technological preparation and shall be confirmed when launching products into manufacture in accordance with GOST 15.001 and GOST 15.005.

5.7.3 The inspection fullness shall be chosen in accordance with 5.7.1 and 5.7.2 for structures of individual and small-scale manufacture.

During the sampling control a random-selected product shall be subjected to the inspection of all parameters. If the actual value of even one parameter falls outside the allowance, this product shall be rejected and the double quantity of products from the same batch shall be inspected. In case of repeated detection of defect with respect to the given parameter, all products of the batch shall be returned to the performer for grading, and then the products shall be submitted for the inspection in accordance with the same procedure.

5.7.4 Operational quality control of welded joints

5.7.4.1 The operational quality control of welded joints shall be performed before applying anticorrosive protective coating (including paintings of structures). The methods and volumes of operational control shall be as specified in table 4.

5.7.4.2 The non-destructive quality control of welded joints shall be performed after the correction of inadmissible defects revealed by the visual examination and measurements.

The welds in places of crossing and in places with attributes of defects shall be subjected to the control first of all.

Table 4

Monitoring method, GOST	Type of controllable welds in accordance with table 1	Volume of control	Notes
Visual examination and measurements	All	100 %	The inspection results for welds of types 1 to 5 in accordance with table 2 shall be made out in the form of report
Ultrasonic inspection in accordance with GOST 14782 or radiographic inspection in accordance with GOST 7512	1 and 2	100 %	—
	3	10 %	Without taking into account the volume stipulated for welds of types 1 and 2
	4	5 %	Ditto
	5 and 8	1 %	»

Table 4 (cont.)

Monitoring method, GOST	Type of controllable welds in accordance with table 1	Volume of control	Notes
Mechanical tests in accordance with GOST 6996	The type of controllable joints, volume of control and the requirements for quality shall be specified in the design documentation taking into account the requirements of 4.10.2		

Notes

1 The methods and volume of control of welded joints in the units of enhanced rigidity in case of increased danger of crack formation shall be additionally specified in the design documentation.

2 The quality control of structures and units in case of danger of formation of cold and layered cracks in welded joints shall be performed not earlier than in two day after the termination of welding works.

If as a result of this control the unsatisfactory quality of weld is detected, the control shall be continued to determine the actual borders of defective portion.

The control shall be carried out in accordance with the requirements of the standards, design and technological documentation. The non-destructive control shall be performed by experienced people (detector operators) certificated in accordance with the established procedure. The conclusion by the control results shall be signed by the specialist, whose qualification is not below than level II.

5.7.4.3 In case of regular revealing inadmissible defects in welded joints (defect level is more than 10 %) using non-destructive control methods, the volume of control shall be doubled; and in case of further revealing inadmissible defects it is necessary to perform the 100 %-control of all given type joints.

5.7.4.4 The welded joints, which do not meet the requirements for quality, shall be corrected in accordance with the developed technology and then repeatedly inspected.

5.7.5 The methods and volumes of control shall be applied in accordance with the instructions of this Standard if other requirements are not specified in the design documentation. Upon the agreement with the design organization other effective monitoring methods may be used instead of specified ones or in addition to them.

5.8 Acceptance control

5.8.1 The acceptance control shall be applied to accept finished articles on the basis of quality data received during the incoming, operational, periodic and handing-over control.

5.8.2 The periodic control shall be carried out in the terms established by the technological documentation of the manufacturer or shall be carried unplanned in case of revealing regular discrepancies to the requirements of the normative or design documentation during the handing-over control.

5.8.3 If unsatisfactory results are received during the periodic control, the release of structures shall be stopped until the reasons of defects are eliminated.

5.8.4 The handing-over control of each structure batch shall be carried out using the product indicators and procedures specified in table 5 as follows:

the sampling control shall be applied to the units of production included in sample, whose volume is chosen in accordance with the requirements of 5.3 and 5.4;

the complete control shall be applied to each unit of production.

5.8.5 The consumer has the right to perform the incoming control of structures applying acceptance procedures established by the Standard, standards, specifications or design documentation for particular structures.

Table 5

Controllable parameter	Type of control
Documents of incoming and operational control	Availability check of documents and data on the conformity of controllable parameters to the requirements of specifications
Geometrical parameters of structures (dispatch element) affecting the assembly suitability	Measurement
Quality of welded joints*	Visual examination for checking the conformity to the requirements of 4.10.8
	Control in accordance with 5.7.4.2 in case of defects revealed by visual examination; in this case the control volume shall be as specified in table 4

Table 5 9 (cont.)

Controllable parameter	Type of control
Quality of apertures for bolt and riveted joints	Visual examination
	Measurement
Appearance and thickness of coating	Visual examination
	Measurement of thickness
* When performing handing-over control of welded joints, the checked control portions shall be cleared of anticorrosive protective coating.	

6 Monitoring methods

6.1 The control of products shall be carried out by the technical control department of the manufacturer and supervising body.

6.2 The types and methods of monitoring products shall be chosen in accordance with the Standard, as well as the standards and specifications for particular structures of mass production, the design documentation for structures of individual and small-scale manufacture, if any.

6.3 The choice of methods and equipment for measuring the geometrical parameters of structures during the control shall be made in accordance with GOST 23616.

6.4 The procedures for performing measurements of geometrical parameters shall be chosen in accordance with GOST 26433.1 and GOST 26433.2.

6.5 The quality control of clearing and degreasing shall be performed in accordance with GOST 9.402.

6.6 The appearance of coating shall be inspected visually in accordance with GOST 9.302 for metal and nonmetallic inorganic coatings and in accordance with GOST 9.032 for paint and varnish coatings.

6.7 The control of coating thickness shall be performed by non-destructive methods using devices for the inspection of coating thickness in accordance with GOST 9.302. The mean value of five coating thickness measurements per each controllable portion shall be taken as the measurement result.

6.8 The fulfillment of requirements for coating density, elasticity, adhesion, bend test and other requirements for coatings, if they are established in the design and normative documentation, shall be checked by the procedures approved in the established procedure.

6.9 The geometrical parameters of structures during the control and general assembly shall be inspected in accordance with GOST 26433.2.

The mounting bolt joints shall be checked with calibres in accordance with the requirements established in the design documentation.

6.10 The completeness, marking and packing shall be checked for the conformity to the requirements of 4.12 to 4.14.

7 Transportation and storage

7.1 The requirements for transportation and storage shall be established in the standards or specifications for structures of mass production and in the design documentation for structures of individual manufacturing.

7.2 The loading, transportation, unloading and storage of structures shall be performed using procedures excluding a possibility of structure damage, as well as providing the constancy of structure coating. It is not permitted to unload a structure by dropping down, as well as to move a structure by dragging.

7.3 The safety requirements for cargo handling of structures shall be in accordance with GOST 12.3.009.

7.4 The conditions of transportation and storage of structures shall be established depending on climatic factors of environment in accordance with GOST 15150.

7.5 The transportation of structures is permitted by transport of any type. The loading and fastening of structures when transporting by railway shall be carried out on an open rolling stock taking into account the maximal use of carrying capacity in accordance with GOST 22235 and in accordance with the requirements established in the Regulations of cargo transportation and technical requirements for cargo loading and fastening.

7.6 The location and fastening of individual structures, packages and pallets on vehicles shall be made in accordance with the schemes developed in accordance with the active specifications and regulations related to the transport of specific type.

7.7 The loading and unloading of structures, transport packages and box pallets shall be carried out in a way preventing the damage of structures and vehicles.

7.8 The structures shall be stored in the specially equipped warehouses and sorted according to orders, assembly units and grades.

7.9 When storing, the stable position of structures, packages and box pallets shall be provided, their contact with ground shall be prevented, as well as the measures against the accumulation of atmospheric moisture on or inside structures shall be taken.

7.10 In case of multi-layer staking, the structures, packages and box pallets located in overlying layer shall be separated from the underlying ones with wooden partitions that are placed in one vertical with supports.

7.11 The schemes of warehousing shall provide for preventing the deformation of structures and ensure the safety during slinging and slinging out structures, packages or box pallets.

7.12 The warehousing shall provide for good visibility of structure marking.

7.13 The dimensions of people and vehicle passes between stacks or separate structures in a warehouse shall meet the requirements of building norms and regulations concerning the safety procedures.

8 Quality certificate

8.1 The quality certificate of steel building structures shall be made out for each building and installation erected at a building site or for a batch of structures.

8.2 The form of quality certificate of steel building structures is given in Appendix Г.

9 Instructions for installation

9.1 The installation of structures shall be performed in accordance with the requirements of installation normative documents and the rules established by the project for organizing and performing installation works.

APPENDIX A

(reference)

List of normative documents

GOST 2.314-68 Unified System of Design Documentation. Instructions on product marking and branding in drawings

GOST 9.032-74 ESZKS (Unified System of Protection against Corrosion and Aging). Paint and varnish coatings. Groups, technical requirements and designations

GOST 9.302-88 ESZKS. Metal and nonmetallic inorganic coatings. Quality monitoring methods

GOST 9.402-80 ESZKS. Paint and varnish coatings. Preparation of metal surfaces for painting

GOST 12.3.009-76* Occupational Safety Standards System. Cargo handling. General safety requirements

GOST 15.001-88 System for product developing and launching into manufacture. Industrial and technological products

GOST 15.005-86 System for product developing and launching into manufacture. Development of individual and small-scale manufacture products to be assembled at a place of operation

GOST 1759.0-87 Bolts, screws, pins and nuts. Specifications

GOST 5264-80 Manual arc welding. Welded joints. Basic types, constructive elements and dimensions

GOST 6996-66 Welded joints. Methods for determining mechanical properties

GOST 7512-82 Non-destructive control. Welded joints. Radiographic method

GOST 8713-79 Hidden-arc welding. Welded joints. Basic types. Constructive elements and dimensions

GOST 11533-75 Automatic and semi-automatic hidden-arc welding. Joints welded under sharp and blunt angles. Basic types. Constructive elements and dimensions

GOST 11534-75 Manual arc welding. Joints welded under sharp and blunt angles. Basic types. Constructive elements and dimensions

GOST 14192-96 Cargo marking

GOST 14771-76 Arc welding in protective gas. Welded joints. Basic types. Constructive elements and dimensions

GOST 14782-86 Non-destructive control. Welded joints. Methods of ultrasonic inspection

GOST 15150-69* Machines, devices and other technical products. Modifications for various climatic areas. Categories, conditions of operation, storage and transportation regarding the effect of environmental climatic factors

GOST 18160-72 Fastening products. Packing. Marking. Transportation and storage

GOST 21650-76 Means of piece cargo fastening in transport packages. General requirements

GOST 21778-81 System for ensuring the accuracy of geometrical parameters in construction. General provisions

GOST 21779-82 System for ensuring the accuracy of geometrical parameters in construction. Technological allowances

GOST 21780-83 System for ensuring the accuracy of geometrical parameters in construction. Calculation of accuracy

GOST 22235-76 Cargo cars for main railways with 1520 mm track. General requirements for ensuring the protection of cargo during handling and shunting works

GOST 22353-77 High-strength bolts in accuracy class B. Design and dimensions

GOST 22356-77 High-strength bolts and nuts and washers. General specifications

GOST 23518-79 Arc welding in protective gases. Joints welded under sharp and blunt angles. Basic types, constructive elements and dimensions

GOST 23616-79 System for ensuring the accuracy of geometrical parameters in construction. Control of accuracy

GOST 24297-87 Incoming control of products. General provisions

GOST 25726-83 Alphabetic and digital manual brands. Types and basic dimensions

GOST 26047-83 Steel building structures. Conditional designations (grades)

GOST 26433.1-89 System for ensuring the accuracy of geometrical parameters in construction. Procedures of measurement. Elements of factory manufacturing

GOST 26433.2-94 System for ensuring the accuracy of geometrical parameters in construction. Procedures for measuring parameters of buildings and installations

SNiP 2.03.11-85 Protection of building structures against corrosion

SNiP 11-23-81* Steel building structures. Norms of designing

APPENDIX Б
(obligatory)

Requirements for quality of welded joints

Table Б.1 - **Allowable defects**

Name of defect	Characteristic of defects with respect to location, form and dimension	Allowable defects with respect to quality level		
		high	average	low
1 Cracks	Cracks of all kinds, dimensions and orientation	Not permitted		
2 Pores and porosity	Maximal total area of pores in relation to the area of weld projection on a portion inspected*	1 %	2 %	4 %
	Maximal dimension of a single pore:			
	butt weld	$d \le 40.2S$	$d \le 0.25S$	$d \le 0.3S$
	angular weld,	$d \le 0.2$K	$d \le 0.25$K	$d \le 0.3$K
	but no more than	3 mm	4 mm	5 mm
3 Congestion of pores	Maximal total area of pores in relation to the area of weld defective portion **	4 %	8 %	16 %
	Maximal dimension of a single pore::			
	butt weld	$d \le 0.2S$	$d \le 0.25S$	$d \le 0.3S$
	angular weld,	$d \le 0.2$K	$d \le 0.25$K	$d \le 0.3$K
	but no more than	2 mm	3 mm	4 mm
	Distance between congestions	$L \ge 12\ t$	$L \ge 12\ t$	$L \ge 12\ t$
4 Gas cavities and flaws	Long defects	Not permitted		
	Short defects:			
	butt weld	$h \le 0.2S$	$h \le 0.25S$	$h \le 0.3S$
	angular weld	$h \le 0.2$K	$h \le 0.25$K	$h \le 0.3$K
	maximal dimension of gas cavity or flaw	2 mm	3 mm	4 mm

Table Б.1 (cont.)

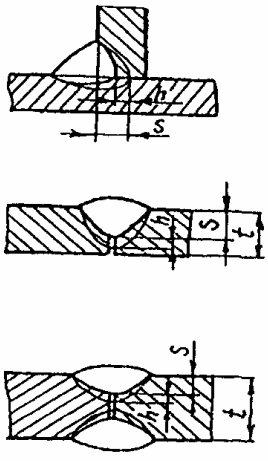
Name of defect	Characteristic of defects with respect to location, form and dimension	Allowable defects with respect to quality level		
		high	average	low
5 Slag inclusions	Long defects	Not permitted		
	Short defects: butt weld angular weld Maximal dimension of inclusion	 $h \le 0.2S$ $h \le 0.2S$ 2 mm	 $h \le 0.25S$ $h \le 0.25$K 3 mm	 $h \le 0.3S$ $h \le 0.3K$ 4 mm
6 Inclusions of copper, tungsten and other metals	Foreign metal inclusions	Not permitted		
7 Poor penetration and incomplete fusion	Long defects	Ditto		
	Short-dimension poor penetration: butt weld angular weld Distance between defects	Not permitted		$h \le 0.1S$ $h \le 0.1K$ Max 2 mm $L \ge 12\ t$
	Incomplete fusion	Not permitted		
8 Poor penetration (incomplete fusing-up)		Not permitted	Long defects are not permitted Short defects: $h \le 0.1S$ Max 1.5 mm	 $h \le 0.25$ Max 2 mm

Table Б.1 (cont.)

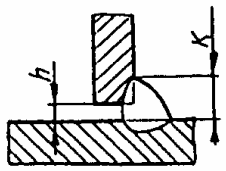
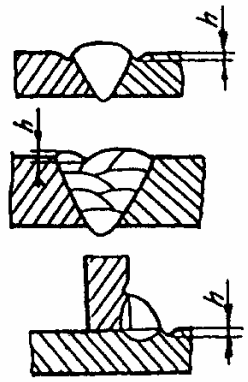
Name of defect	Characteristic of defects with respect to location, form and dimension	Allowable defects with respect to quality level		
		high	average	low
9 Unsatisfactory gap in tee joint	Excessive or insufficient gap between details  Excessive gap in some cases can be compensated by the increase of weld cathetus	$h < 0.5$ mm + 0.1K Max 2 mm	$h \le 0.5$ mm + 0.15K Max 3 mm	$h \le 1$ mm + 0.2K Max 4 mm
10 Undercuts	The transition from the weld to the basic metal shall be smooth Outlines of undercuts shall be smooth  	$h \le 0.5$ mm	$h \le 1.0$ mm	$h \le$, 1.5 mm

Table Б.1 (cont.)

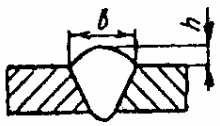
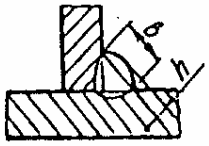
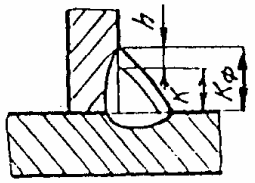
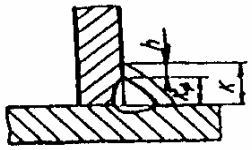
Name of defect	Characteristic of defects with respect to location, form and dimension	Allowable defects with respect to quality level		
		high	average	low
11. Excess of convexity:	The transition from the weld to the basic metal shall be smooth	$h \le 1$ mm + 0.1 $в$	$h \le 1$ mm + 0.15 $в$	$h \le 1$ mm + 0.25 $в$
butt weld		Max 5 mm	Max 7 mm	Max 10 mm
angular weld		Max 3 mm	Max 4 mm	Max 5 mm
12 Increase of angular weld cathetus	Excessive cathetus for the majority of angular welds is not the reason of rejection  $h = К_ф$ - К	$h \le 1$ mm + 0.1K Max 2 mm	$h \le 1$ mm + 0.15K Max 3 mm	$h \le 1$ mm + 0.2K Max 5 mm
13 Reduction of angular weld cathetus	 $h = К - К_ф$	Not permitted	Long defects are not permitted Short defects: $h \le 0.3$ mm + 0.1 K Max 1 mm	Max 2 mm

Table Б.1 (cont.)

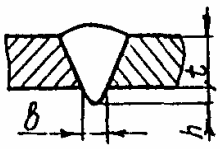
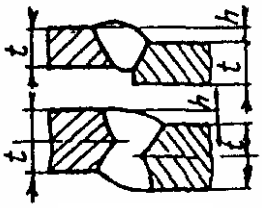
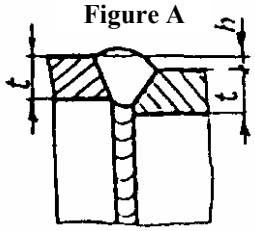
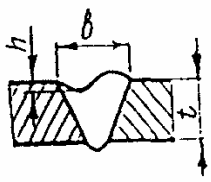
<table>
<tr><th rowspan="2">Name of defect</th><th rowspan="2">Characteristic of defects with respect to location, form and dimension</th><th colspan="3">Allowable defects with respect to quality level</th></tr>
<tr><th>high</th><th>average</th><th>low</th></tr>
<tr><td>14 Excess of weld root convexity</td><td>Excessive fusion of weld root
  </td><td>$h \le 1$ mm
$+ 0.3$ в
Max
3 mm</td><td>$h \le 1$ mm
$+ 0.6$ в
Max
4 mm</td><td>$h \le 1$ mm
$+ 1.2$ в
Max
5 mm</td></tr>
<tr><td rowspan="4">15 Linear displacement of edges</td><td rowspan="4"> 
Figure A
 
Figure Б</td><td colspan="3">Figure A - Sheets and longitudinal welds</td></tr>
<tr><td>$h \le 0.1\ t$
Max
3 mm</td><td>$h \le 0.15\ t$
Max
4 mm</td><td>$h \le 0.25\ t$
Max
5 mm</td></tr>
<tr><td colspan="3">Figure Б - Ring welds</td></tr>
<tr><td>$h \le 0.2\ t$
Max
2 mm</td><td>$h \le 0.3\ t$
Max
3 mm</td><td>$h \le 0.5\ t$
Max
4 mm</td></tr>
<tr><td rowspan="3">16 Incomplete filling of prepared edges (concavity of weld)</td><td rowspan="3">The transition from the weld to the basic metal shall be smooth
  </td><td colspan="3">Long defects are not permitted</td></tr>
<tr><td colspan="3">Short defects:</td></tr>
<tr><td>$h \le 0.05\ t$
Max
0.5 mm</td><td>$h \le 0.1\ t$
Max
1 mm</td><td>$h \le 0.2\ t$
Max
2 mm</td></tr>
</table>

Table Б.1 (cont.)

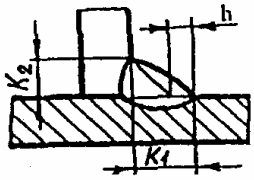
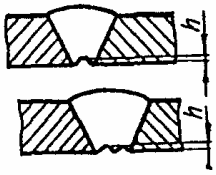
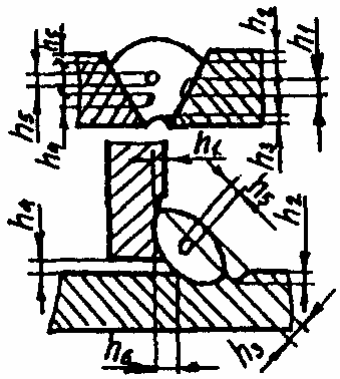
Name of defect	Characteristic of defects with respect to location, form and dimension	Allowable defects with respect to quality level		
		high	average	low
17 Asymmetry of angular weld	Cathetus difference of angular weld, if it is not stipulated by the working documentation  $h = K_1 - K_2$	$h \le 1.5$ mm + 0.1K	$h \le 2$ mm + 0.1K	$h \le 2$ mm + 0.15K
18 Concavity of weld root, binding	The transition from the weld to the metal shall be smooth 	$h \le 0.5$ mm	$h \le 1$ mm	$h \le 1.5$ mm
19 Inflows		Not permitted		
20 Bad renewal of arch burning	Local roughness of weld surface in a place of repeated arch ignition	Not permitted		Permitted
21. Burn or flashing-off of basic metal Sprays of melted metal Score metal surface	Local damages owing to the arch ignition outside the weld Sparks stuck to the surface of metal Damage of surfaces caused by the removal of accessory adaptations	Permitted if corrected		

Table Б.1 (cont.)

Name of defect	Characteristic of defects with respect to location, form and dimension	Allowable defects with respect to quality level		
		high	average	low
Marks of polishing and cutting Metal narrowing	Local damages owing to polishing and cutting Reduction of metal thickness owing to polishing	Permitted if corrected		
22 Set of defects along weld cross-section	Maximal total height of short defects Σh: $h_1 + h_2 + h_3 + h_4 + h_5 + h_6 \le \Sigma h$ 	For $S \le 10$ mm, K > 8 mm		
		0.15 S 0.15 K	0.2 S 0.2 K	0.25 S 0.2 K
		For S > 10 mm, K > 8 mm		
		0,2050,2 To Max 10мм	0,2550,25 To Max 10мм	0,350,3 To Max 10мм

* The area of weld projection to the plane, which is parallel to the surface of joint, is equal to the product of weld width by length over defective portion.

** The total area of pore congestion is calculated in percents of greater of two areas: the area of surface including all pores or the area of circle with diameter equal to the weld width.

Notes

1 Long defects shall be understood as one or several defects, whose total length is more than 25 mm over each of 100 mm of weld or over minimum 25 % of weld length if the weld length is less than 100 mm.

2 Short defects shall be understood as one or several defects, whose total length is no more than 25 mm over each of 100 mm of weld or over maximum of 25 % of weld length if the weld length is less than 100 mm.

3 Conditional designations:

S - nominal thickness of butt weld, mm;

K - nominal dimension of angular weld cathetus, mm;

$в$ - actual thickness of butt weld, mm;

$К_ф$ - actual dimension of angular weld cathetus, mm;

l - thickness of metal, mm;

d - diameter of pore, mm;

h - dimension (height or width) of defect, mm;

L - distance between defects or defective portions, mm.

APPENDIX B
(recommended)

Maximum deviations from calculated dimensions in building and installation skeletons

T a b l e B . 1 - Deviation of linear dimensions of steel building structures and dispatch elements

Range of nominal lengths, mm	Value of maximum deviation, mm, when using accuracy factor *K*		
	0.25	0.40	0.60
From 2500 to 4000 inclusive	± 2.0	± 3.0	± 5.0
Over 4000 » 8000 »	± 2.5	± 4.0	± 6.0
» 8000 » 16000 »	± 3.0	± 5.0	± 8.0
» 16000 » 25000 »	± 4.0	± 6.0	± 10
» 25000	± 5.0	± 8.0	± 12
Note - The assembly suitability level of general purpose steel building structures reaches 100 % when using K = 0.25, 98 % when using K = 0.4 and not lower than 90 % when using K = 0.6.			

T a b l e B.2 - Deviations from the difference of diagonal lengths

Range of nominal lengths, mm	Value of maximum deviation, mm, when using accuracy factor *K*		
	0.25	0.40	0.60
To 4000 inclusive	± 2.0	± 3.0	± 5.0
Over 4000 to 8000 inclusive	± 2.5	± 4.0	± 6.0
» 8000 » 16000 »	± 3.0	± 5.0	± 8.0
» 16000 » 25000 »	± 4.0	± 6.0	± 10.0
» 25000	± 5.0	± 8.0	± 12.0
Note to tables B.1 and B.2 – The accuracy factor is determined in accordance with GOST 21779.			

APPENDIX Г

(obligatory)

Form of quality certificate

Series ____ No. ____

_____

(manufacturing enterprise (organization))

_____

(post address)

_____

(number and validity period of state license for the right to manufacture steel building structures)

Quality certificate
of steel building structures

Order No. _____ Contract No. _____ for delivery

Customer _____

_____

1. Name of installation _____

_____

2. Name of steel building structures _____

3. Mass in accordance with the manufacturer's drawings in tons _____

4. Date of manufacture beginning _____

5. Date of manufacture completion/shipment _____

6. Organization, which made the design documentation (drawing index and No.) _____

_____

7. Organization, which made the complete set of manufacturer's working drawings (drawing index and No.) _____

_____

_____

Appendix Г (cont.)

8. The steel building structures are made in conformity with _____

_____

(specify the normative documents)

9. The structures are made from steel of grade _____

_____

and comply with the requirements of the design documentation.

The quality certificates and certificates for rolled products are stored at the enterprise.

10. The welded joints are performed by the certificated welders and comply with _____

_____

(specify the normative documents)

The certificates of welders and reports of control sample tests are stored at the enterprise.

11. Welding materials:

electrodes _____

(grade, type, standard)

welding wire _____

(grade, standard)

flux _____

(grade, standard)

protective gases _____

(name, grade, standard)

meet the requirements of the normative-and-technical and design documentation.

The quality certificates and certificates of welding materials are stored at the enterprise.

12. In accordance with the terms of contract for delivery, the structures are protected from corrosion by:

hot zinc plating _____

(thickness of coating in microns)

priming _____

(grade of prime, quantity of layers)

painting _____

(grade of enamel, quantity of layers)

Appendix Г (cont.)

The quality certificates and certificates of protective coating materials are stored at the enterprise.

13. The quality certificate is made out on the basis of acceptance acts

_____

(numbers and dates of acceptance act made-out)

14. In accordance with the terms of contract for delivery and the requirements of GOST _____ the quality certificate is accompanied by: _____

_____

(list of documents and number of copies)

_____

_____

_____

_____

_____

The present quality certificate guarantees the conformity of manufactured steel building structures to the design documentation and GOST _____.

Head of Technical Control Department
of the enterprise (organization)

_____

(position)

_____

(family name, first name, patronymic)

_____

(signature, date)

(stamp)

The quality certificate and appendices in accordance with the inventory are sent to the customer with accompanying letter No. _____ dated _____

(date)

UDC [69+624.014.04 (083.74) Ж34 OKS (All-Union Classification Code) 91.080.10

Key words: steel building structures, classification; general technical requirements for materials, accuracy of manufacturing, welded and bolt joints, anticorrosive protection, completeness, marking, packing; acceptance procedures; quality monitoring methods; transportation and storage; quality certificate; instructions for installation

Interstate Standard

STEEL BUILDING STRUCTURES

General Specifications

GOST 23118-99

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