

45 Included in 27 standards (CIS Countries)

Standards

| | |
|-----------------|--|
| GOST 1050-88 | Carbon structural quality steel gauged bars with special surface finish. General specifications. |
| GOST 12132-66 | Electrowelded and seamless steel tubes for automotive and bicycle industries. Specifications. |
| GOST 13663-86 | Shaped steel tubes. Technical requirements. |
| GOST 14918-80 | Continuously galvanized sheet steel. Specifications. |
| GOST 1577-93 | Rolled sheets and wide strips of structural quality steel. Specifications. |
| GOST 17305-91 | Wire of carbon constructional steel. Specifications. |
| GOST 21729-76 | Cold-deformed and hot-deformed structural carbon and alloyed steel tubes. Specifications. |
| GOST 2284-79 | Cold-rolled carbon structural steel strip. Specifications. |
| GOST 23270-89 | Tubes-billets for mechanical treatment. Specifications. |
| GOST 8319.0-75 | Hot-rolled steel periodical lengthwise-rolled sections. Specifications. |
| GOST 8319.11-75 | Hot-rolled steel periodical lengthwise-rolled sections for axle of a spreader. Dimensions. |
| GOST 8319.12-75 | Hot-rolled steel periodical lengthwise-rolled sections for axle of a farm trailer. Dimensions. |
| GOST 8319.2-75 | Hot-rolled steel periodical lengthwise-rolled sections for front axle of ZIL-130 automobile. Dimensions. |
| GOST 8319.5-75 | Hot-rolled steel periodical lengthwise-rolled sections for front of MAZ and KrAZ automobiles. Dimensions. |
| GOST 8319.6-75 | Hot-rolled steel periodical lengthwise-rolled sections for crankshaft of GA3-69 automobile. Dimensions. |
| GOST 8319.8-75 | Hot-rolled steel periodical lengthwise-rolled sections for axle of 1-AP-1,5, U2-AP3, IAPZ-739 automobile trailers. Dimensions. |
| GOST 8731-74 | Seamless hot-deformed steel pipes. Specifications. |
| GOST 8733-87 | Seamless cold-deformed and thermal-deformed steel pipes. Specifications. |

45 Included in 27 standards (CIS Countries)

| | |
|--------------------|--|
| GOST R 51682-00 | Casing and coring tubes for geology-exploring drilling. Specifications |
| GOST R 54159-10 | Seamless and welded cold deformed steel pipes for general purposes. Specifications |
| OST 108.958.04-85 | General purpose steel forgings for turbines and compressors |
| TU 108.11.984-88 | Seamless hot-rolled general purpose tubes |
| TU 14-178-399-2000 | Steel flattened strip |
| TU 14-3R-50-2001 | Seamless hot-rolled thick-walled tubes from casting |
| TU 14-3R-51-2001 | Seamless hot-deformed thick-walled tubes for mechanical engineering |
| TU 14-4-1338-85 | Flattened steel strip |
| TU 14-4-936-78 | Heat treated binding zinc-coated steel wire |

Chemical composition

| | | | | | | | |
|----------|-------------|-----------|-------------|-----------|-----------|-----------|---------|
| C | 0.42 - 0.50 | Si | 0.17 - 0.37 | Mn | 0.5 - 0.8 | P | < 0.035 |
| S | < 0.04 | Cr | < 0.4 | Ni | < 0.4 | Cu | < 0.3 |
| N | < 0.01 | As | < 0.08 | Fe | Rest | | |

GOST 1050-88: N < 0.006% - sheets and strip without out-of-furnace processing
GOST 1050-88: N < 0.008% -the other rolled products without out-of-furnace processing
GOST 1050-88: Ni > 0.3 by agreement
GOST 1050-88: Cr > 0.25% : by agreement

Properties

By GOST 1050
Normalized

It is allowed to decrease the elongation by 2% totally and contraction ratio by 5% totally for rolled products of diameter or thickness above 80mm .

By consumer agreement reduction of strength by 20 N/mm2 on simultaneous increasing of elongation by 2% totally is permissible.

Yield Strength: > 355 MPa
Tensile Strength: > 600 MPa
Elongation: > 16 %

45 Included in 27 standards (CIS Countries)

Reduction of area: > 40 %

Rolled product with specified hardness

Hot rolled and forged products

Without heat treatment

Hardness HB: < 229

Annealing or high-temperature tempering

Hardness HB: < 197

Calibrated and special surface finishing bars

Hard-drawn

Hardness HB: < 241

Annealing or high-temperature tempering

Hardness HB: < 207

Cold-worked with increased hardness

Hardness HB: < 256

Calibrated bars with specified mechanical properties

Hard-drawn

Tensile Strength: > 640 MPa

Elongation: > 6 %

Reduction of area: > 30 %

Annealing or high-temperature tempering

Tensile Strength: > 540 MPa

Elongation: > 13 %

Reduction of area: > 40 %

Rolled product with impact toughness inspection

Impact Value KCU, 20°C: > 49 J/sm²

Rolled product with specified mechanical properties at heat-treated blanks made of specimens

Diameter: < 16 mm ;

Yield Strength: > 490 MPa

Tensile Strength: 700 - 850 MPa

Elongation: > 14 %

Impact energy KU: > 15 J

Diameter: 16 - 40 mm ;

Yield Strength: > 430 MPa

Tensile Strength: 650 - 800 MPa

Elongation: > 16 %

Impact energy KU: > 15 J

Diameter: 40 - 100 mm ;

Yield Strength: > 375 MPa

Tensile Strength: 630 - 780 MPa

45 Included in 27 standards (CIS Countries)

Elongation: > 17 %

Impact energy KU: > 15 J

Rolled products with quenched specimen hardness inspection

Hardness HRC: > 46

By GOST 1577

Standard characteristic

Without heat treatment or after controlled rolling

Thickness: < 80 mm ;

Hardness HB: < 229

Diameter cone impression: > 4 mm

Normalization

Thickness: < 80 mm ;

Hardness HB: < 229

Diameter cone impression: > 4 mm

Annealing or high-temperature tempering

Thickness: < 80 mm ;

Hardness HB: < 197

Diameter cone impression: > 4.3 mm

Consumer specified characteristic

It is allowed to reduce the elongation by 0.25% totally for rolled products of thickness above 20 mm for increase of thickness by 1mm , but not more than by 2% for rolled products of thickness up to 32 mm and 3% for thickness above 32 mm.

Plate

Without heat treatment, after controlled rolling or normalized

Thickness: 4 - 80 mm ;

Tensile Strength: > 590 MPa

Elongation: > 18 %

Annealing or high-temperature tempering

Reduction of strength by 39N/mm² is permitted for annealed rolled products.

Thickness: 4 - 80 mm ;

Tensile Strength: > 550 MPa

Elongation: > 19 %

Normalized wide strips or normalized blanks

Thickness: 6 - 60 mm ;

Yield Strength: > 355 MPa

Tensile Strength: > 600 MPa

Elongation: > 16 %

45 Included in 27 standards (CIS Countries)

By agreement

Normalization

Thickness: 4 - 16 mm ;
Yield Strength: > 340 MPa
Tensile Strength: 580 - 770 MPa

Thickness: 16 - 100 mm ;
Yield Strength: > 305 MPa
Tensile Strength: 580 - 770 MPa

Thickness: 100 - 160 mm ;
Yield Strength: > 275 MPa
Tensile Strength: 560 - 750 MPa

Longitudinal

Thickness: 4 - 16 mm ;
Elongation: > 17 %

Thickness: 16 - 100 mm ;
Elongation: > 17 %

Thickness: 100 - 160 mm ;
Elongation: > 15 %

Transverse

Thickness: 4 - 16 mm ;
Elongation: > 15 %

Thickness: 16 - 100 mm ;
Elongation: > 15 %

Thickness: 100 - 160 mm ;
Elongation: > 13 %

Quenched and tempered

Thickness: 4 - 16 mm ;
Yield Strength: > 500 MPa
Tensile Strength: 700 - 850 MPa
Elongation: > 14 %
Reduction of area: > 35 %
Impact energy KV 20°C: > 25 J

Thickness: 16 - 40 mm ;
Yield Strength: > 430 MPa
Tensile Strength: 650 - 800 MPa
Elongation: > 16 %
Reduction of area: > 40 %
Impact energy KV 20°C: > 25 J

45 Included in 27 standards (CIS Countries)

Thickness: 40 - 100 mm ;

Yield Strength: > 370 MPa

Tensile Strength: 630 - 780 MPa

Elongation: > 17 %

Reduction of area: > 45 %

Impact energy KV 20°C: > 25 J

Strip by GOST 2284

Ordinary quality

Annealing

Tensile Strength: 440 - 690 MPa

Elongation: > 14 %

Cold-worked

Strength spread within a lot:

150 N/mm² - for band of thickness under 0.36 mm;

180 N/mm² - for band of thickness above 0.36mm through 1.00mm;

200 N/mm² - for band of thickness above 1.00mm

Tensile Strength: 690 - 1030 MPa

Premium

Annealing

Tensile Strength: 440 - 600 MPa

Elongation: > 14 %

Cold-worked

Strength spread within a lot:

150 N/mm² - for band of thickness under 0.36 mm;

180 N/mm² - for band of thickness above 0.36mm through 1.00mm;

200 N/mm² - for band of thickness above 1.00mm

Tensile Strength: 690 - 1030 MPa

By GOST 8319

Yield Strength: 353 MPa

Tensile Strength: 598 MPa

By GOST 8731-74

Group V

Wall thickness: < 10 mm ;

Yield Strength: > 323 MPa

Tensile Strength: > 588 MPa

Elongation: > 14 %

Wall thickness: > 10 mm ;

Yield Strength: > 323 MPa

Tensile Strength: > 588 MPa

45 Included in 27 standards (CIS Countries)

Elongation: > 14 %
Hardness HB: < 207
Diameter cone impression: > 4.2 mm

By GOST 8733

Wall thickness: < 10 mm ;

Yield Strength: > 323 MPa
Tensile Strength: > 589 MPa
Elongation: > 14 %

Wall thickness: > 10 mm ;

Yield Strength: > 323 MPa
Tensile Strength: > 589 MPa
Elongation: > 14 %
Hardness HB: < 207
Diameter cone impression: > 4.2 mm

Wire GOST 17305

Diameter: 0.32 - 0.75 mm ;

Tensile Strength: > 1080 MPa

Diameter: 0.8 - 1.0 mm ;

Tensile Strength: > 980 MPa
Inflections: > 5

Diameter: 1.1 - 1.2 mm ;

Tensile Strength: > 880 MPa
Inflections: > 6

Diameter: 1.2 - 1.5 mm ;

Tensile Strength: > 880 MPa
Inflections: > 2

Diameter: 1.5 - 2.0 mm ;

Tensile Strength: > 880 MPa
Inflections: > 4

Diameter: 2.1 - 2.6 mm ;

Tensile Strength: > 880 MPa
Inflections: > 3

Diameter: 2.6 - 3.0 mm ;

Tensile Strength: > 880 MPa
Inflections: > 3

Diameter: 3.1 - 3.5 mm ;

Tensile Strength: > 780 MPa
Inflections: > 3

Diameter: 3.6 - 4.0 mm ;

45 Included in 27 standards (CIS Countries)

Tensile Strength: > 780 MPa
Inflections: > 2
Diameter: 4.1 - 5.0 mm ;

Tensile Strength: > 780 MPa
Inflections: > 3
Diameter: 5.3 - 6.0 mm ;

Tensile Strength: > 780 MPa
Inflections: > 1
Diameter: 6.1 - 7.0 mm ;

Tensile Strength: > 740 MPa
Inflections: > 1

Pipes GOST 21729
Heat-treated

Tensile Strength: > 588 MPa
Elongation: > 14 %

Tubes-billets GOST 23270
Hardness is tested if wall thickness is above 10 mm
Hot finished

Yield Strength: > 323 MPa
Tensile Strength: > 588 MPa
Elongation: > 14 %
Hardness HB: < 207
Diameter cone impression: > 4.2 mm

Cold-deformed

Yield Strength: > 323 MPa
Tensile Strength: > 589 MPa
Elongation: > 14 %
Hardness HB: < 207
Diameter cone impression: > 4.2 mm

Seamless pipes GOST 12132
Heat-treated

Tensile Strength: > 588 MPa
Elongation: > 14 %
Hardness HRB: < 95

Shaped tubes ac.GOST 13663
Heat-treated
Hot finished

Yield Strength: > 323 MPa
Tensile Strength: > 549 MPa

45 Included in 27 standards (CIS Countries)

Elongation: > 14 %
Cold-deformed
Yield Strength: > 323 MPa
Tensile Strength: > 549 MPa
Elongation: > 14 %

After rolling heat
Hot finished
Yield Strength: > 323 MPa
Tensile Strength: > 549 MPa
Elongation: > 14 %

Cold-deformed
Yield Strength: > 323 MPa
Tensile Strength: > 549 MPa
Elongation: > 14 %

By GOST R 51682
Normalization
Yield Strength: > 373 MPa
Tensile Strength: > 638 MPa
Elongation: > 16 %
Hardness HB: > 180

Improvement
Yield Strength: > 755 MPa
Tensile Strength: > 862 MPa
Elongation: > 11 %
Hardness HRC: > 26

Normalization and surface hardening
Core
Yield Strength: > 373 MPa
Tensile Strength: > 638 MPa
Elongation: > 16 %
Hardness HB: > 180

Surface
Hardness HRC: > 45

Improvement with surface quenching
Core
Yield Strength: > 755 MPa
Tensile Strength: > 862 MPa
Elongation: > 11 %
Hardness HRC: > 26

45 Included in 27 standards (CIS Countries)

Surface

Hardness HRC: > 47

By TU 108.11.984-88

Yield Strength: > 345 MPa

Tensile Strength: > 650 MPa

Elongation: > 14 %

By TU 14-3R-51-2001

Yield Strength: > 323 MPa

Tensile Strength: > 588 MPa

Elongation: > 14 %

By GOST 14918

First category of quality

Gropu XSch

N drawing category

Thickness: 0.5 - 0.6 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 21 %

Erikson test method, mm: > 6.9 mm

Thickness: 0.6 - 0.7 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 21 %

Erikson test method, mm: > 7.2 mm

Thickness: 0.7 - 0.8 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 22 %

Erikson test method, mm: > 7.5 mm

Thickness: 0.8 - 0.9 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 22 %

Erikson test method, mm: > 7.8 mm

Thickness: 0.9 - 1.0 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 22 %

Erikson test method, mm: > 8.2 mm

Thickness: 1.0 - 1.1 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 22 %

Erikson test method, mm: > 8.6 mm

Thickness: 1.1 - 1.2 mm ;

45 Included in 27 standards (CIS Countries)

Tensile Strength: 300 - 490 MPa
Elongation: > 22 %
Erikson test method, mm: > 8.7 mm
Thickness: 1.2 - 1.3 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 22 %
Erikson test method, mm: > 8.8 mm
Thickness: 1.3 - 1.4 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 22 %
Erikson test method, mm: > 8.9 mm
Thickness: 1.4 - 1.5 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 22 %
Erikson test method, mm: > 9 mm
Thickness: 1.5 - 1.6 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9.1 mm
Thickness: 1.6 - 1.7 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9.5 mm
Thickness: 1.7 - 1.8 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9.6 mm
Thickness: 1.8 - 1.9 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9.7 mm
Thickness: 1.9 - 2.0 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9.8 mm
Thickness: > 2 mm ;

Tensile Strength: 300 - 490 MPa
Elongation: > 24 %
Erikson test method, mm: > 9.9 mm

45 Included in 27 standards (CIS Countries)

G drawing category

- Thickness: 0.5 - 0.6 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 23 %**
 - Erikson test method, mm: > 8 mm**
- Thickness: 0.6 - 0.7 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 23 %**
 - Erikson test method, mm: > 8.5 mm**
- Thickness: 0.7 - 0.8 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 8.9 mm**
- Thickness: 0.8 - 0.9 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 9.3 mm**
- Thickness: 0.9 - 1.0 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 9.6 mm**
- Thickness: 1.0 - 1.1 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 9.9 mm**
- Thickness: 1.1 - 1.2 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 10.1 mm**
- Thickness: 1.2 - 1.3 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 10.3 mm**
- Thickness: 1.3 - 1.4 mm ;
 - Tensile Strength: 275 - 430 MPa**
 - Elongation: > 24 %**
 - Erikson test method, mm: > 10.5 mm**
- Thickness: 1.4 - 1.5 mm ;
 - Tensile Strength: 275 - 430 MPa**

45 Included in 27 standards (CIS Countries)

Elongation: > 24 %

Erikson test method, mm: > 10.6 mm

Thickness: 1.5 - 1.6 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 25 %

Erikson test method, mm: > 10.8 mm

Thickness: 1.6 - 1.7 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 25 %

Erikson test method, mm: > 11 mm

Thickness: 1.7 - 1.8 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 25 %

Erikson test method, mm: > 11.1 mm

Thickness: 1.8 - 1.9 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 25 %

Erikson test method, mm: > 11.2 mm

Thickness: 1.9 - 2.0 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 25 %

Erikson test method, mm: > 11.3 mm

Thickness: > 2 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 26 %

Erikson test method, mm: > 11.4 mm

OH group

Thickness: < 0.8 mm ;

Inflections: 8

Thickness: 0.8 - 1.2 mm ;

Inflections: 5

Thickness: 1.2 - 2.0 mm ;

Inflections: 3

Thickness: > 2 mm ;

Inflections: 2

Highest quality

Gropu XSch

N drawing category

S < 0.035

45 Included in 27 standards (CIS Countries)

P < 0.020

- Thickness: 0.5 - 0.6 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 22 %
Erikson test method, mm: > 7.1 mm
- Thickness: 0.6 - 0.7 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 22 %
Erikson test method, mm: > 7.4 mm
- Thickness: 0.7 - 0.8 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 7.7 mm
- Thickness: 0.8 - 0.9 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 8 mm
- Thickness: 0.9 - 1.0 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 8.4 mm
- Thickness: 1.0 - 1.1 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 8.8 mm
- Thickness: 1.1 - 1.2 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 8.9 mm
- Thickness: 1.2 - 1.3 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9 mm
- Thickness: 1.3 - 1.4 mm ;
Tensile Strength: 300 - 490 MPa
Elongation: > 23 %
Erikson test method, mm: > 9.1 mm
- Thickness: 1.4 - 1.5 mm ;
Tensile Strength: 300 - 490 MPa

45 Included in 27 standards (CIS Countries)

Elongation: > 23 %

Erikson test method, mm: > 9.2 mm

Thickness: 1.5 - 1.6 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 24 %

Erikson test method, mm: > 9.3 mm

Thickness: 1.6 - 1.7 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 24 %

Erikson test method, mm: > 9.7 mm

Thickness: 1.7 - 1.8 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 24 %

Erikson test method, mm: > 9.8 mm

Thickness: 1.8 - 1.9 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 24 %

Erikson test method, mm: > 9.9 mm

Thickness: 1.9 - 2.0 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 24 %

Erikson test method, mm: > 10 mm

Thickness: > 2 mm ;

Tensile Strength: 300 - 490 MPa

Elongation: > 25 %

Erikson test method, mm: > 10.1 mm

G drawing category

S < 0.035

P < 0.020

Thickness: 0.5 - 0.6 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 24 %

Erikson test method, mm: > 8.2 mm

Thickness: 0.6 - 0.7 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 24 %

Erikson test method, mm: > 8.7 mm

Thickness: 0.7 - 0.8 mm ;

Tensile Strength: 275 - 430 MPa

45 Included in 27 standards (CIS Countries)

Elongation: > 25 %
Erikson test method, mm: > 9.1 mm
Thickness: 0.8 - 0.9 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 9.5 mm
Thickness: 0.9 - 1.0 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 9.8 mm
Thickness: 1.0 - 1.1 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 10.1 mm
Thickness: 1.1 - 1.2 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 10.3 mm
Thickness: 1.2 - 1.3 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 10.5 mm
Thickness: 1.3 - 1.4 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 10.7 mm
Thickness: 1.4 - 1.5 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 25 %
Erikson test method, mm: > 10.8 mm
Thickness: 1.5 - 1.6 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 26 %
Erikson test method, mm: > 11 mm
Thickness: 1.6 - 1.7 mm ;
Tensile Strength: 275 - 430 MPa
Elongation: > 26 %
Erikson test method, mm: > 11.2 mm
Thickness: 1.7 - 1.8 mm ;

45 Included in 27 standards (CIS Countries)

Tensile Strength: 275 - 430 MPa

Elongation: > 26 %

Erikson test method, mm: > 11.3 mm

Thickness: 1.8 - 1.9 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 26 %

Erikson test method, mm: > 11.4 mm

Thickness: 1.9 - 2.0 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 26 %

Erikson test method, mm: > 11.5 mm

Thickness: > 2 mm ;

Tensile Strength: 275 - 430 MPa

Elongation: > 27 %

Erikson test method, mm: > 11.6 mm

OH group

Thickness: < 0.8 mm ;

Inflections: 8

Thickness: 0.8 - 1.2 mm ;

Inflections: 5

Thickness: 1.2 - 2.0 mm ;

Inflections: 3

Thickness: > 2 mm ;

Inflections: 2

Forgins by OST 108.958.04-85

KP 245 strength group

Longitudinal test pieces

Thickness: < 100 mm ;

Yield Strength: > 245 MPa

Tensile Strength: > 470 MPa

Elongation: > 22 %

Hardness HB: 143 - 179

Impact Value KCU, 20°C: > 49 J/sm²

Reduction of area: > 48 %

Diameter cone impression: 4.5 - 5.0 mm

Thickness: 100 - 300 mm ;

Yield Strength: > 245 MPa

Tensile Strength: > 470 MPa

Elongation: > 19 %

45 Included in 27 standards (CIS Countries)

Hardness HB: 143 - 179
Impact Value KCU, 20 °C: > 39 J/sm²
Reduction of area: > 42 %
Diameter cone impression: 4.5 - 5.0 mm

Thickness: 300 - 500 mm ;

Yield Strength: > 245 MPa
Tensile Strength: > 470 MPa
Elongation: > 17 %

Hardness HB: 143 - 179
Impact Value KCU, 20 °C: > 34 J/sm²
Reduction of area: > 35 %

Diameter cone impression: 4.5 - 5.0 mm

Thickness: 500 - 800 mm ;

Yield Strength: > 245 MPa
Tensile Strength: > 470 MPa
Elongation: > 15 %

Hardness HB: 143 - 179
Impact Value KCU, 20 °C: > 34 J/sm²
Reduction of area: > 30 %

Diameter cone impression: 4.5 - 5.0 mm

KP 275 strength group

Longitudinal test pieces

Thickness: < 100 mm ;

Yield Strength: > 275 MPa
Tensile Strength: > 530 MPa
Elongation: > 20 %

Hardness HB: 156 - 197
Impact Value KCU, 20 °C: > 44 J/sm²
Reduction of area: > 40 %

Diameter cone impression: 4.3 - 4.8 mm

Thickness: 100 - 300 mm ;

Yield Strength: > 275 MPa
Tensile Strength: > 530 MPa
Elongation: > 17 %

Hardness HB: 156 - 197
Impact Value KCU, 20 °C: > 34 J/sm²
Reduction of area: > 38 %

Diameter cone impression: 4.3 - 4.8 mm

Thickness: 300 - 500 mm ;

45 Included in 27 standards (CIS Countries)

Yield Strength: > 275 MPa
Tensile Strength: > 530 MPa
Elongation: > 15 %
Hardness HB: 156 - 197
Impact Value KCU, 20°C: > 29 J/sm²
Reduction of area: > 32 %
Diameter cone impression: 4.3 - 4.8 mm

Thickness: 500 - 800 mm ;

Yield Strength: > 275 MPa
Tensile Strength: > 530 MPa
Elongation: > 13 %
Hardness HB: 156 - 197
Impact Value KCU, 20°C: > 29 J/sm²
Reduction of area: > 30 %
Diameter cone impression: 4.3 - 4.8 mm

KP 315 strength group

Longitudinal test pieces

Thickness: < 100 mm ;

Yield Strength: > 315 MPa
Tensile Strength: > 570 MPa
Elongation: > 17 %
Hardness HB: 167 - 207
Impact Value KCU, 20°C: > 39 J/sm²
Reduction of area: > 38 %
Diameter cone impression: 4.20 - 4.65 mm

Thickness: 100 - 300 mm ;

Yield Strength: > 315 MPa
Tensile Strength: > 570 MPa
Elongation: > 14 %
Hardness HB: 167 - 207
Impact Value KCU, 20°C: > 34 J/sm²
Reduction of area: > 35 %
Diameter cone impression: 4.20 - 4.65 mm

Thickness: 300 - 500 mm ;

Yield Strength: > 315 MPa
Tensile Strength: > 570 MPa
Elongation: > 12 %
Hardness HB: 167 - 207
Impact Value KCU, 20°C: > 29 J/sm²

45 Included in 27 standards (CIS Countries)

Reduction of area: > 30 %
Diameter cone impression: 4.20 - 4.65 mm

Thickness: 500 - 800 mm ;

Yield Strength: > 315 MPa
Tensile Strength: > 570 MPa

Elongation: > 11 %

Hardness HB: 167 - 207

Impact Value KCU, 20 °C: > 29 J/sm²

Reduction of area: > 30 %

Diameter cone impression: 4.20 - 4.65 mm

KP 345 strength group

Longitudinal test pieces

Thickness: < 100 mm ;

Yield Strength: > 345 MPa

Tensile Strength: > 590 MPa

Elongation: > 18 %

Hardness HB: 174 - 217

Impact Value KCU, 20 °C: > 59 J/sm²

Reduction of area: > 45 %

Diameter cone impression: 4.10 - 4.55 mm

Thickness: 100 - 300 mm ;

Yield Strength: > 345 MPa

Tensile Strength: > 590 MPa

Elongation: > 17 %

Hardness HB: 174 - 217

Impact Value KCU, 20 °C: > 54 J/sm²

Reduction of area: > 40 %

Diameter cone impression: 4.10 - 4.55 mm

Thickness: 300 - 500 mm ;

Yield Strength: > 345 MPa

Tensile Strength: > 590 MPa

Elongation: > 14 %

Hardness HB: 174 - 217

Impact Value KCU, 20 °C: > 49 J/sm²

Reduction of area: > 38 %

Diameter cone impression: 4.10 - 4.55 mm

Thickness: 500 - 800 mm ;

Yield Strength: > 345 MPa

Tensile Strength: > 590 MPa

45 Included in 27 standards (CIS Countries)

Elongation: > 12 %
Hardness HB: 174 - 217
Impact Value KCU, 20 °C: > 39 J/sm²
Reduction of area: > 33 %
Diameter cone impression: 4.10 - 4.55 mm

KP 395 strength group

Longitudinal test pieces

Thickness: < 100 mm ;

Yield Strength: > 395 MPa
Tensile Strength: > 615 MPa
Elongation: > 17 %
Hardness HB: 187 - 229
Impact Value KCU, 20 °C: > 59 J/sm²
Reduction of area: > 45 %
Diameter cone impression: 4.0 - 4.4 mm

Thickness: 100 - 300 mm ;

Yield Strength: > 395 MPa
Tensile Strength: > 615 MPa
Elongation: > 15 %
Hardness HB: 187 - 229
Impact Value KCU, 20 °C: > 54 J/sm²
Reduction of area: > 40 %
Diameter cone impression: 4.0 - 4.4 mm

Thickness: 300 - 500 mm ;

Yield Strength: > 395 MPa
Tensile Strength: > 615 MPa
Elongation: > 13 %
Hardness HB: 187 - 229
Impact Value KCU, 20 °C: > 49 J/sm²
Reduction of area: > 35 %
Diameter cone impression: 4.0 - 4.4 mm

Thickness: 500 - 800 mm ;

Yield Strength: > 395 MPa
Tensile Strength: > 615 MPa
Elongation: > 11 %
Hardness HB: 187 - 229
Impact Value KCU, 20 °C: > 39 J/sm²
Reduction of area: > 30 %
Diameter cone impression: 4.0 - 4.4 mm

45 Included in 27 standards (CIS Countries)

Strip by TU 14-4-1338-85

Tensile Strength: 880 - 1230 MPa

By customer's demand

Tensile Strength: > 1230 MPa

Strip by TU 14-178-399-2000

Tensile Strength: 880 - 1230 MPa

By customer's demand

Tensile Strength: > 1230 MPa

Steel wire by TU 14-4-936-78

Group A

Diameter: 2.2 mm ;

Tensile Strength: 880 - 1180 MPa

Elongation: > 7 %

Diameter: 2.5 mm ;

Tensile Strength: 880 - 1180 MPa

Elongation: > 7 %

Diameter: 2.6 mm ;

Tensile Strength: 690 - 980 MPa

Elongation: > 8 %

Diameter: 3 mm ;

Tensile Strength: 690 - 980 MPa

Elongation: > 8 %

Group B

Diameter: 2.2 mm ;

Tensile Strength: 690 - 1180 MPa

Elongation: > 6.5 %

Diameter: 2.5 mm ;

Tensile Strength: > 1180 MPa

Elongation: > 6.5 %

Diameter: 2.6 mm ;

Tensile Strength: 590 - 980 MPa

Elongation: > 7.5 %

Diameter: 3 mm ;

Tensile Strength: > 980 MPa

Elongation: > 7.5 %

By GOST R 54159

Group V

Heat-treated

Yield Strength: > 323 MPa

45 Included in 27 standards (CIS Countries)

Tensile Strength: > 589 MPa

Elongation: > 14 %

Hardness HB: < 207

Cold-deformed

Default properties

Yield Strength: > 216 MPa

Tensile Strength: > 315 MPa

Elongation: > 5 %