

Catalogue of products

PJSC «ArcelorMittal Kryvyi Rih»

Rebar

Wire rod

Section

Billet

Pig iron



The CEO's appeal

What makes ArcelorMittal Kryvyi Rih different? Our passion. We are passionate about making high quality steel for our customers all around the world.

We pour our souls into our steel. We do our very best to meet the highest standards of quality. We are accountable to our customers who use our steel to build the strongest bridges, the most comfortable homes and the highest towers in every climate zone of the world.

Today our portfolio includes ordinary and low alloy steel bars and wire rods, hot-rolled billets, sinter, concentrate, coke, and pig iron. Our strong steel is inside Dubai's Burj Khalifa, Chornobyl New Safe Confinement, Flame Towers in Baku, Trinity Cathedral in Tbilisi, and many more amazing buildings around the world. Other than Ukraine, we also sell in more than 50 countries in Europe, Middle East, West and North Africa, Central and South America.

We are proud of our partners who share our values: quality, leadership and sustainability. We stand behind our promise of the highest proof of service and quality we give to each customer.

ArcelorMittal Kryvyi Rih values our customers' feedback. We know how to listen and how to really hear you, because we believe that the centerpiece of every partnership lies in an unwavering trust. This is why we constantly deploy new technologies, expand our range of products and services, and grow our distribution network.

We strive towards making an environmentally clean steel. We love what we do. We love our company and our customers. And we firmly believe that our steel makes the world a better place.

Thank you for your partnership and trust!

Mauro Longobardo

CEO

ArcelorMittal Kryvyi Rih

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Map of ArcelorMittal Kryvyi Rih warehouses and sales offices

ArcelorMittal is the world's leading mining and metallurgical company. ArcelorMittal is a leader in the world's major metallurgical markets, including automotive, construction, home appliances and packaging.

The company also has large stocks of raw materials and an efficient sales system. ArcelorMittal has offices in 60 countries.

ArcelorMittal operates on six continents, including both developed and emerging markets.

In Ukraine, in addition to ArcelorMittal Kryvyi Rih itself, the company has product warehouses in the following cities:

- Vyshneve, Kyivska str., 21, building 5;
- Kyiv, Lugovaya str., 9;
- Dnipro, Kursantska str., 1;
- Odesa, Ataman Holovaty str., 73/1;
- Lviv, Horodotska str., 355;
- Lviv, Plastova str., 6;
- Ternopil, Mikulinetska str., 46V;

and representative office of PJSC "AMKR" - Kyiv, Mykhailo Hrushevskyi str., 9b.



Our values

Since our company was founded, we have aimed to align all of our activity against four values: safety, sustainability, quality and leadership.

Safety

Success starts with keeping all our employees safe

Every accident is avoidable and every employee working at ArcelorMittal – from the shop floor to the management committee - must hold that belief. This is at the heart of the supportive safety culture we must achieve at all operations.

Our people must be well trained and empowered to speak up about safety risks and concerns. Our golden rules must be rigorously implemented and followed. And our leadership should be a frequent presence on the shop floor, demonstrating that safety is at the core of how we think and act, always. With a refusal to accept anything less, we know we can succeed.

Sustainability

We want to be competitive and thrive in the world of tomorrow

This means we must have a clear view of how the world is evolving, not only from an economic and market perspective, but also the social and environmental mega-trends that will shape our future.

Managing our business profitably through the cycle enables us to invest for the long-term, pursuing the opportunities that will exist for steel in an increasingly circular and decarbonized world and meeting the expectations of all our stakeholders. This will enable us to build the strongest platform for our company as well as make an important contribution to a better world for all.

Quality

Quality is essential to our competitive edge.

We must seek to exceed expectations in terms of our products, processes and performance, combining our deep operational knowledge with keen commercial acumen and a desire to innovate and expand the potential of steel.

We should aspire to achieve excellence in everything we do, inspiring our colleagues to develop new ideas and come out on top.

Leadership

We built and maintained our leadership position through visionary thinking and a willingness to constantly challenge the status quo and be open to doing things differently

It is that approach that enabled us to consistently rank number one with the most demanding of customers. We never accept that the limits of our material have been reached and continually strive to produce ever smarter steels to help solve problems and build the world of tomorrow.

Within the highly competitive, complex and changing world in which we operate today, this is more critical than ever. We are highly motivated by the opportunities this brings to re-define steel for a new generation - driving innovation, pursuing new business models, creating new partnerships, and embracing diversity.

Certification of products

PJSC «ArcelorMittal Kryvyi Rih» is constantly improving the quality of its products. Our company has a corporate quality management system that meets the requirements of the international standard ISO 9001, developed by the Technical Committee of the International Organization for Standardization.

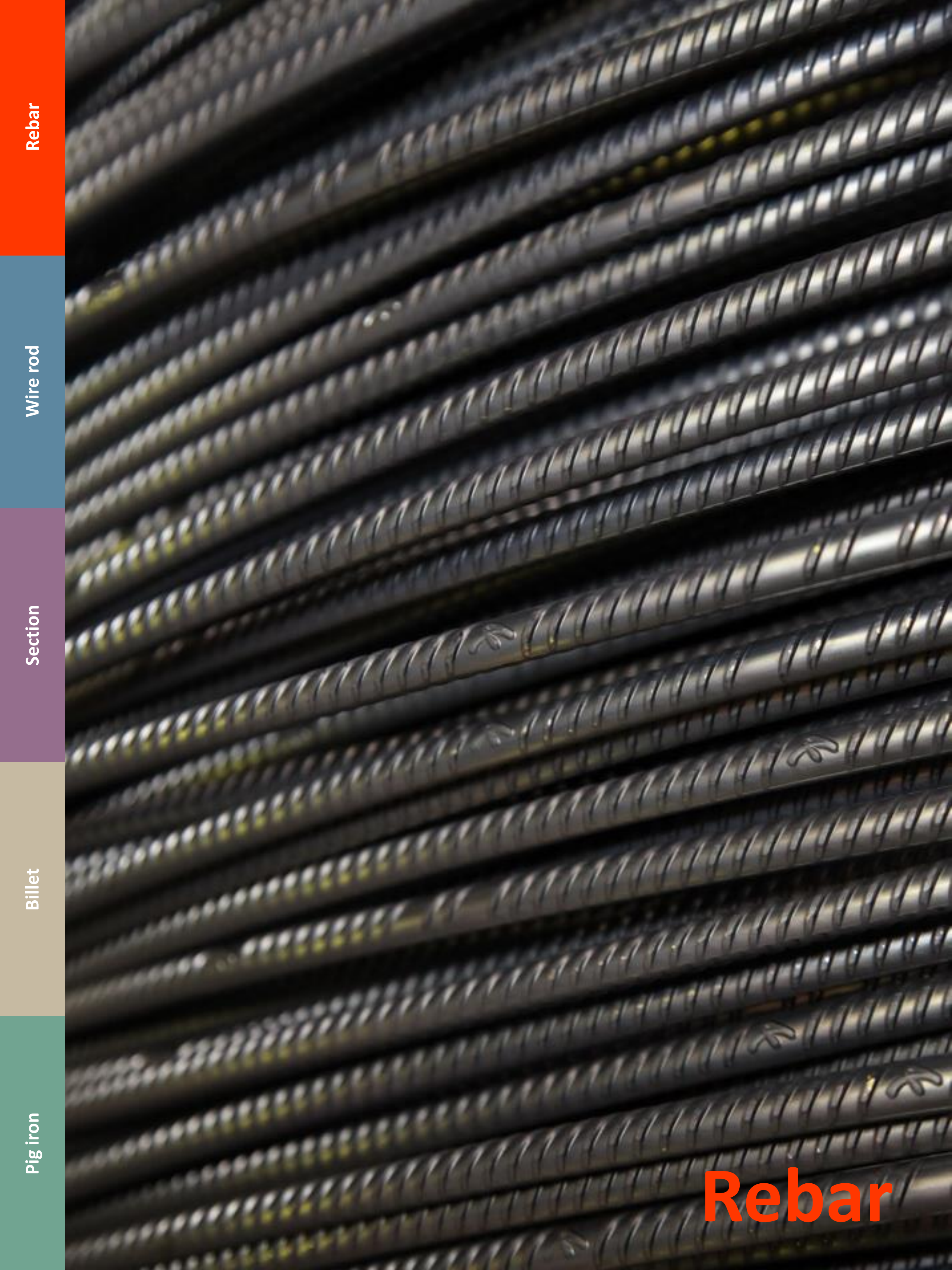
The quality policy implemented at the enterprise is the basis for the current corporate quality management system.

Basic principles of quality policy:

- We manufacture products in accordance with the requirements of regulations and legislation of consumer countries.
- We keep active feedback from the consumer, promptly respond to information about product quality and improve it in a timely manner.
- We are constantly improving production processes at all stages of the product life cycle to meet customer requirements.

PJSC "ArcelorMittal Kryvyi Rih" annually conducts product certification. Currently, the company has certificates of compliance for rebar and section products with the requirements of national standards of such countries as Australia, Great Britain, Romania, France, Bulgaria, Italy, Germany, Sweden, Norway, Finland and other consumer countries. AMKR is constantly expanding the scope of certification to consider new types of products for different countries in accordance with the standards adopted by them.





Rebar

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Rebar

General information about rebar

The company produces rebars according to international and state standards:

| | |
|--|---|
| DSTU 3760:2019 (Ukraine) | ASTM A615, ASTM A706 (USA) |
| GOST 5781-82 (international standard) | SI 4466-3:2013 (Israel) |
| GOST 10884-94 (international standard) | SR 438-1:2012, ST 009-2011 (Romania) |
| TU U 27.1-23365425-652:2010 (Ukraine) | SM SR EN 10080:2014 (Moldova) |
| BS 4449:2005 (Great Britain) | ISO 6935-2:2007, ES 262-2/2009 (Egypt) |
| BDS 9252, BDS 4758 (Bulgaria) | ES ISO 6935-2:2011 (Ethiopia) |
| DIN 488-2:2009, DIN 488-3:2009 (Germany) | SFS 1300:2017 (Finland) |
| NF A 35-080-1:2013 (France) | SS-EN 10080:2005, SS 212540:2014 (Sweden) |
| LST EN 10080:2005 (Lithuania) | NS-EN 10080:2005, NS 3576-2:2012, NS 3576-3:2012 (Norway) |
| NBN A 24-302 (Belgium) | SS 560:2016 (Singapore) |
| NEN 6008 (Netherlands) | AS/NZS 4671:2019 (Australia/New Zealand) |

Bundles and coils dimensions.

Rolled bars are produced with a fixed length of 6 to 14 meters, with maximum tolerances in the bar's length -0/+100 mm. By agreement with the client, it is possible to produce rebar with other values of tolerances in length.

Bundle weight - up to 5 tons. By agreement with the client, production in packs with a different maximum weight is possible.

Rebar in coils is produced with the weight of 1100-2100 kg, with two types of winding (wild, spool). The products are tied with a wire rod with diameters from 5.5 mm to 8.0 mm (wild winding) and a stripes (spool winding).

To mark the product, a marking label with color identification is used, which includes the following details:

- name and trademark of the manufacturer;
- name of the manufacturer;
- contract specification;
- country of destination;
- size of delivered metal products (diameter, profile number, length);
- steel grade or strength grade;
- heat number;
- batch number;
- weight.

Note 1. The content of the labeling may vary by agreement of the consumer and the manufacturer.

Note 2. In agreement with the client, the production of bended rebar with a diameter of 8 - 20 mm is allowed.

Rebars of the periodic profile may include identification marking to determine the manufacturer, strength class and other parameters.

DSTU 3760:2019 (Ukraine)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|-----------|--------------|---------------------------------------|----------------------|----------------------|---|
| | diameter, mm | cross-sectional area, mm ² | | | |
| Bar, coil | 5,5 | 23,8 | 0,187 | ± 8,0 | - |
| | 6,0 | 28,3 | 0,222 | | - |
| | 8,0 | 50,3 | 0,395 | | 387 |
| | 10,0 | 78,5 | 0,617 | +5,0 -6,0 | 255 |
| | 12,0 | 113,0 | 0,888 | | 177 |
| | 14,0 | 154,0 | 1,210 | | 130 |
| | 16,0 | 201,0 | 1,580 | | 100 |
| | 18,0 | 254,0 | 2,000 | | 79 |
| | 20,0 | 314,0 | 2,470 | | 64 |
| | 22,0 | 380,0 | 2,980 | | ± 4,5 |
| Bar | 25,0 | 491,0 | 3,850 | 41 | |
| | 28,0 | 616,0 | 4,830 | 32 | |
| | 32,0 | 804,0 | 6,310 | 25 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (a pack up to 2 tons, length of bars of 12 m -0/+100 mm) is possible.

Mechanical properties:

| Product | Grade | Yield strength, σ_T , at least, N/mm ² | Tensile strength, R_m , at least, N/mm | Relative elongation, δ_5 , % | Bending angle, degrees |
|-----------|-------|--|--|-------------------------------------|------------------------|
| Bar, coil | A240C | 240 | 370 | 25 | 180 |
| | A400C | 400 | 500 | 16 | 90 |
| | A500C | 500 | 600 | 14 | 90 |
| Bar | A800 | 800 | 1000 | 8 | 45 |
| | A1000 | 1000 | 1250 | 7 | 45 |

Product delivery:

- nominal diameter from 8.0 mm to 32.0 mm: bars (A240C from 10.0 to 32.0 mm, A800 from 10.0 to 18.0 mm, A1000 from 10.0 to 14.0 mm);
- nominal diameter 5.5-32.0 mm (A240C); 8.0 mm (A400C and A500C); 10.0 mm (A400C and A500C); 12.0 mm (A400C): coils 1100 - 2100 kg.

GOST 5781-82 (international standard) TU U 24.1-24432974-042:2019 (Ukraine)

Product mix, standard sizes and weight:

| diameter, mm | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|-----------------|--------------|---------------------------------------|----------------------|-------------------------|---|
| | diameter, mm | cross-sectional area, cm ² | | | |
| 8 | | 0,503 | 0,395 | | 383 |
| 10 | | 0,785 | 0,617 | +9,0/-7,0 | 255 |
| 12 | | 1,131 | 0,888 | | 177 |
| 14 | | 1,540 | 1,210 | + 5,0/-6,0 | 130 |
| 16 | | 2,010 | 1,580 | | 101 |
| 18 | | 2,540 | 2,000 | | 80 |
| 20 | | 3,140 | 2,470 | | 64 |
| 22 | | 3,800 | 2,980 | + 3,0/-5,0 | 53 |
| 25 | | 4,910 | 3,850 | | 41 |
| 28 | | 6,160 | 4,830 | | 33 |
| 32 | | 8,040 | 6,310 | + 3,0/-4,0 | 25 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (a pack up to 2 tons, length of bars of 12 m -0/+100 mm) is possible.

Mechanical properties:

| Grade | Yield strength, R _e , at least N/mm ² | Tensile strength, R _m , at least N/mm ² | Relative elongation, at least δ ₅ , % | Bending angle, degrees |
|--------------|--|--|--|---------------------------|
| A-I (A240) | 235 | 373 | 25 | 180 |
| A-III (A400) | 390 | 590 | 14 | 90 |

GOST 10884-94 (international standard)

Product mix, standard sizes and weight:

| diameter, mm | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|--------------|--------------|---------------------------------------|----------------------|-------------------------|---|
| | diameter, mm | cross-sectional area, cm ² | | | |
| 10 | | 0,785 | 0,617 | | 255 |
| 12 | | 1,131 | 0,888 | + 5,0/-6,0 | 177 |
| 14 | | 1,540 | 1,210 | | 130 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (a pack up to 2 tons, length of bars of 12 m -0/+100 mm) is possible.

Mechanical properties:

| Grade | Yield strength, R _e , at least N/mm ² | Tensile strength, R _m , at least, N/mm ² | Relative elongation, at least δ ₅ , % | Bending angle, degrees |
|---------|--|---|--|---------------------------|
| AT 800 | 800 | 1000 | 8 | 45 |
| AT 1000 | 1000 | 1250 | 7 | 45 |

Rebar for the manufacture of anchors for mine workings

Product mix, standard sizes and weight:

| diameter, mm | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|---------------------------------------|--|----------------------|----------------------|
| | cross-sectional area, mm ² | | | |
| 20,0 | 314,0 | | 2,470 | ± 4,5 |
| 22,0 | 380,0 | | 2,980 | |
| 25,0 | 491,0 | | 3,850 | |

* To confirm the technical feasibility - the consumer provides a "nut" as a standard for determining the geometry of the profile (screwing rolled metal with a control nut).



Mechanical properties:

| Grade | Yield strength, R_e , at least, N/mm ² | Tensile strength, R_m , at least, N/mm ² | Full relative elongation at maximum load, δ_{max} , at least % | Relative elongation at fracture, % δ_5 |
|-------|---|---|---|---|
| A400Ш | 400 | 500 | 9 | 20 |
| A500Ш | 500 | 620 | 8 | |

BS 4449:2005 (Great Britain)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|-----------|--------------|---------------------------------------|----------------------|----------------------|---|
| | diameter, mm | cross-sectional area, mm ² | | | |
| Coil, bar | 8 | 50,3 | 0,395 | ± 6,0 | 394 |
| | 10 | 78,5 | 0,617 | | 256 |
| | 12 | 113,0 | 0,888 | | 178 |
| | 16 | 201,0 | 1,580 | | 100 |
| bar | 20 | 314,0 | 2,470 | ± 4,5 | 64 |
| | 25 | 491,0 | 3,850 | | 41 |
| | 32 | 804,0 | 6,310 | | 25 |

Product delivery:

- Grade B500B: bars - 8-32 mm, coils - 8-16 mm;
- Grade B500C: bars - 8-32 mm, coils - 8-12 mm;

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , at least, N/mm ² | Ratio, R_m / R_e | Relative elongation, A_{gt} , % | Bending angle with unbending, degrees |
|-------|---|--------------------|-----------------------------------|---------------------------------------|
| B500B | 500 | Min. 1,08 | 5,0 | 90/20 |
| B500C | 500 | 1,15 ≤ ... < 1,35 | 7,5 | |

BDS 4758:2007 (Bulgaria)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|-----------|--------------|---------------------------------------|----------------------|----------------------|
| | diameter, mm | cross-sectional area, mm ² | | |
| Coil | 6,0 | 28,3 | 0,222 | ± 6 |
| | 8,0 | 50,3 | 0,395 | |
| | 10,0 | 78,5 | 0,617 | |
| | 12,0 | 113,0 | 0,888 | |
| | 14,0 | 154,0 | 1,210 | |
| | 16,0 | 201,0 | 1,580 | |
| Coil, bar | 18,0 | 254,0 | 2,000 | ± 4,5 |
| | 20,0 | 314,0 | 2,470 | |
| | 22,0 | 380,0 | 2,980 | |
| | 25,0 | 491,0 | 3,850 | |
| | 28,0 | 616,0 | 4,830 | |
| | 32,0 | 804,0 | 6,310 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , | Tensile strength, R_m , | Relative elongation, |
|-------|-------------------------|---------------------------|----------------------|
| | N/mm ² | N/mm ² | A_5 , % |
| B235 | 235 | at least 370 | 25 |

BDS 9252:2007 (Bulgaria)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|-----------|--------------|---------------------------------------|----------------------|----------------------|
| | diameter, mm | cross-sectional area, mm ² | | |
| Coil, bar | 8 | 50,3 | 0,395 | ± 6,0 |
| | 10 | 78,5 | 0,617 | |
| | 12 | 113,1 | 0,888 | |
| | 16 | 201,1 | 1,578 | |
| bar | 20 | 314,2 | 2,466 | ± 4,5 |
| | 25 | 490,9 | 3,853 | |
| | 32 | 804,2 | 6,313 | |

Product delivery:

- Grade B500B: bars - 8-32 mm, coils - 8-16 mm coils 1100 - 2100 kg;
- Grade B500C: bars - 8-32 mm.

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , at least, N/mm ² | Tensile strength, R_m , at least, N/mm ² | Ratio, R_m / R_e | Relative elongation, A_{gt} , at least, % | Bending angle and bending/unbending, degrees |
|-------|---|---|--------------------|---|--|
| B500B | 500 | 550 | Min. 1,08 | 5,0 | 180; 90/20 |
| B500C | 500 | 575 | 1,15 ≤ ... < 1,35 | 7,5 | |

DIN 488-2:2009, DIN 488-3:2009 (Germany)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|-----------|--------------|---------------------------------------|----------------------|----------------------|
| | diameter, mm | cross-sectional area, mm ² | | |
| Bar, coil | 8 | 50,3 | 0,395 | +6,0/-4,0 |
| | 10 | 78,5 | 0,617 | |
| | 12 | 113 | 0,888 | |
| Bar | 14 | 154 | 1,210 | |
| | 16 | 201 | 1,580 | |
| | 20 | 314 | 2,470 | |
| | 25 | 491 | 3,850 | |
| | 28 | 616 | 4,830 | |
| | 32 | 804 | 6,310 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , N/mm ² | Ratio, R_m / R_e at least | Relative elongation, A_{gt} , % | Bending angle with unbending, degrees |
|-------|--|-----------------------------------|--------------------------------------|--|
| B500B | 500 | 1,08 | 5 | 90/20 |

NF A 35-080-1:2013 (France)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|-----------|--------------|---------------------------------------|----------------------|----------------------|---|
| | diameter, mm | cross-sectional area, mm ² | | | |
| Bar, coil | 8 | 50,3 | 0,395 | +4,5/-4,5 | 400 |
| | 10 | 78,5 | 0,617 | | 256 |
| | 12 | 113,1 | 0,888 | | 178 |
| | 14 | 153,9 | 1,210 | | 130 |
| | 16 | 201,1 | 1,580 | | 100 |
| Bar | 20 | 314,2 | 2,470 | | 64 |
| | 25 | 490,9 | 3,850 | | 41 |
| | 32 | 804,2 | 6,310 | | 25 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , MPa | Tensile strength, R_m , at least MPa | Ratio, at least, R_m/R_e | Relative elongation, at least A_{gt} , % | Bending angle, degrees |
|-------|-----------------------------|--|----------------------------|--|------------------------|
| B500B | 500-650 | 550 | 1,08 | 5 | 180 |

LST EN 10080:2005 (Lithuania)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|---------|--------------|---------------------------------------|----------------------|----------------------|
| | diameter, mm | cross-sectional area, mm ² | | |
| Coil | 8 | 50,3 | 0,395 | +6,0/-6,0 |
| | 10 | 78,5 | 0,617 | |
| | 12 | 113 | 0,888 | |
| | 14 | 154 | 1,210 | |
| | 16 | 201 | 1,580 | |
| Bar | 18 | 254 | 2,000 | +4,5/-4,5 |
| | 20 | 314 | 2,470 | |
| | 22 | 380 | 2,980 | |
| | 25 | 491 | 3,850 | |
| | 28 | 616 | 4,830 | |
| | 32 | 804 | 6,310 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , at least MPa | Tensile strength, R_m , at least MPa | Ratio, at least, R_m/R_e | Relative elongation, at least A_{gt} , % | Bending angle with unbending, degrees |
|-------|--------------------------------------|--|----------------------------|--|---------------------------------------|
| B500B | 500-650 | 550 | 1,08 | 5 | 90/20 |

NBN A 24-302 (Belgium)

Product mix, standard sizes and weight:

| Product | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|-----------|--------------|---------------------------------------|----------------------|----------------------|
| | diameter, mm | cross-sectional area, mm ² | | |
| Bar, coil | 8 | 50,3 | 0,395 | +4,5/-4,5 |
| | 10 | 78,5 | 0,617 | |
| | 12 | 113 | 0,888 | |
| | 14 | 154 | 1,210 | |
| | 16 | 201 | 1,580 | |
| Bar | 18 | 254 | 2,000 | |
| | 20 | 314 | 2,470 | |
| | 22 | 380 | 2,980 | |
| | 25 | 491 | 3,850 | |
| | 28 | 616 | 4,830 | |
| | 32 | 804 | 6,310 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , MPa | Tensile strength, R_m , MPa | Ratio, R_m / R_e | Relative elongation, A_{gt} , % | Relative elongation at fracture | | Bending angle and bending/unbending, degrees |
|---------|-----------------------------|-------------------------------|--------------------|-----------------------------------|---------------------------------|------------|--|
| | | | | | A_5 % | A_{10} % | |
| BE 500S | 500 | 550 | 1,05 | 2,5 | 14 | 10 | 180; 90/20 |

NEN 6008 (Netherlands)

Product mix, standard sizes and weight:

| Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|---------------------------------------|----------------------|----------------------|
| diameter, mm | cross-sectional area, mm ² | | |
| 8 | 50,3 | 0,395 | |
| 10 | 78,5 | 0,617 | |
| 12 | 113 | 0,888 | |
| 14 | 154 | 1,210 | |
| 16 | 201 | 1,580 | +4,5/-4,5 |
| 20 | 314 | 2,470 | |
| 25 | 491 | 3,850 | |
| 28 | 616 | 4,830 | |
| 32 | 804 | 6,310 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , MPa | Ratio, R_m / R_e at least | Relative elongation, A_{gt} , % | Bending angle with unbending, degrees |
|-------|--------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|
| | | | 5 | 90/20 |
| B500B | 500 | 1,08 | 5 | 90/20 |

ASTM A615-07 (USA)

Product mix, standard sizes and weight:

| Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|--------------|---------------------------------------|----------------------|----------------------|---|
| diameter, mm | cross-sectional area, mm ² | | | |
| 8,0 | 50,3 | 0,395 | - 6,0 | 387 |
| 10,0 | 78,5 | 0,617 | | 255 |
| 12,0 | 113,0 | 0,888 | | 177 |
| 14,0 | 154,0 | 1,210 | | 130 |
| 16,0 | 201,0 | 1,580 | | 100 |
| 18,0 | 254,0 | 2,000 | | 79 |
| 20,0 | 314,0 | 2,470 | | 64 |
| 22,0 | 380,0 | 2,980 | | 53 |
| 25,0 | 491,0 | 3,850 | | 41 |
| 28,0 | 616,0 | 4,830 | | 32 |
| 32,0 | 804,0 | 6,310 | | 25 |

| Designation of a bar | | Nominal size | | Mass per meter |
|----------------------|------|--------------|----------------------|----------------|
| | | diameter | cross-sectional area | |
| # | No | mm | mm ² | kg/m |
| 3 | [10] | 9,5 | 71 | 0,560 |
| 4 | [13] | 12,7 | 129 | 0,994 |
| 5 | [16] | 15,9 | 199 | 1,552 |
| 6 | [19] | 19,1 | 284 | 2,235 |
| 7 | [22] | 22,2 | 387 | 3,042 |
| 8 | [25] | 25,4 | 510 | 3,973 |
| 9 | [29] | 28,7 | 645 | 5,060 |
| 10 | [32] | 32,3 | 819 | 6,404 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

ASTM A615-07 (USA)

Rebar

Mechanical properties:

| Diameter, mm | Grade | Yield strength, at least, MPa | Tensile strength, at least, MPa | Elongation, at least % | Bending angle, degrees |
|--------------|----------|-------------------------------|---------------------------------|------------------------|------------------------|
| 8, 10 | 40 [280] | 280 | 420 | 11 | 180 |
| 12 – 18 | | | | 12 | |
| 20 | | | | 12 | |
| 8 – 20 | 60 [420] | 420 | 620 | 9 | |
| 22, 25 | | | | 8 | |
| 28, 32 | | | | 7 | |
| 8 – 25 | 75 [520] | 520 | 690 | 7 | |
| 28, 32 | | | | 6 | |

Wire rod

| Designation of a bar | Grade | Yield strength, at least, psi / [MPa] | Tensile strength, at least, psi / [MPa] | Elongation, at least, % | Bending angle, degrees |
|----------------------|----------|---------------------------------------|---|-------------------------|------------------------|
| 3 | 40 [280] | 40000 [280] | 60000 [420] | 11 | 180 |
| 4, 5 | | | | 12 | |
| 6 | | | | 12 | |
| 3, 4, 5, 6 | 60 [420] | 60000 [420] | 90000 [620] | 9 | |
| 7, 8 | | | | 8 | |
| 9, 10 | | | | 7 | |
| 6, 7, 8 | 75 [520] | 75000 [520] | 100000 [6]90 | 7 | |
| 9, 10 | | | | 6 | |

Section

Billet

Pig iron

ASTM A706-16 (USA)

Product mix, standard sizes and weight:

| Nominal size | | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|--------------|---------------------------------------|----------------------|----------------------|---|
| diameter, mm | cross-sectional area, mm ² | | | |
| 8,0 | 50,3 | 0,395 | - 6,0 | 387 |
| 10,0 | 78,5 | 0,617 | | 255 |
| 12,0 | 113,0 | 0,888 | | 177 |
| 14,0 | 154,0 | 1,210 | | 130 |
| 16,0 | 201,0 | 1,580 | | 100 |
| 18,0 | 254,0 | 2,000 | | 79 |
| 20,0 | 314,0 | 2,470 | | 64 |
| 22,0 | 380,0 | 2,980 | | 53 |
| 25,0 | 491,0 | 3,850 | | 41 |
| 28,0 | 616,0 | 4,830 | | 32 |
| 32,0 | 804,0 | 6,310 | | 25 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Diameter | Grade | Yield strength, at least, MPa | Tensile strength, at least, MPa | Elongation, at least % | Bending angle, degrees |
|----------|----------|-------------------------------|---------------------------------|------------------------|------------------------|
| 8 – 20 | 60 [420] | 420 – 540 | 550 | 14 | 180 |
| 22 – 32 | | | | 12 | |

SI 4466-3:2013 (Israel)

Rebar

Wire rod

Section

Billet

Pig iron

Product mix, standard sizes and weight:

| Product | Nominal diameter, mm | Cross-sectional area, mm ² | Mass per meter, kg/m | Maximum tolerance, % | * minimum number of bars in a pack, pcs |
|-----------|----------------------|---------------------------------------|----------------------|----------------------|---|
| Coil, bar | 8 | 50,3 | 0,395 | +4,5/-2,5 | 400 |
| | 10 | 78,5 | 0,617 | | 256 |
| | 12 | 113 | 0,888 | | 179 |
| | 14 | 154 | 1,21 | | 131 |
| | 16 | 201 | 1,58 | +3,5/-2,5 | 100 |
| | 18 | 254 | 2,00 | | 79 |
| | 20 | 314 | 2,47 | | 64 |
| | 22 | 380 | 2,98 | | 53 |
| Bar | 25 | 491 | 3,85 | | 41 |
| | 32 | 804 | 6,31 | | 25 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R _{eH} , at least, N/mm ² | Relative elongation, A ₁₀ , at least % | Relative elongation, A _{gt} , at least % | Ratio at least R _m / R _{eH} | Bending angle with unbending, degrees |
|-----------|---|---|---|---|---------------------------------------|
| S400W (D) | 400-520 | 12 | 8 | 1,25-1,45 | 160-180 |
| S500W (C) | 500-650 | 11 | 7,5 | 1,15-1,35 | 160-180 |

SR 438-1:2012 (Romania)

Product mix, standard sizes and weight:

| Diameter, mm | Nominal size | | Cross-sectional area, cm ² | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|--------------|--------|---------------------------------------|----------------------|----------------------|
| | OB 37 | PC 52 | | | |
| 6 | ± 0,4 | - | 0,283 | 0,222 | ± 8,0 |
| 7 | | - | 0,385 | 0,302 | |
| 8 | | - | 0,503 | 0,395 | |
| 10 | + 0,3 | + 0,30 | 0,785 | 0,617 | |
| 12 | | - 0,50 | 1,130 | 0,888 | |
| 14 | | - 0,50 | 1,540 | 1,210 | |
| 16 | - 0,5 | | 2,010 | 1,580 | ± 5,0 |
| 18 | | | 2,540 | 1,990 | |
| 20 | + 0,5 | + 0,40 | 3,140 | 2,470 | |
| 22 | | - 0,50 | 3,800 | 2,984 | |
| 25 | - 0,8 | | 4,910 | 3,850 | |
| 28 | | + 0,40 | 6,160 | 4,840 | |
| 32 | | - 0,75 | 8,040 | 6,310 | |

Product delivery:

- nominal diameter 8,0-32,0 mm (PC 52); 10,0-32,0 mm (OB 37): bars;
- nominal diameter 6,0-22,0 mm (B500B); 8,0-16,0 mm (B500C): coils 1100 - 2100 kg.

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Nominal diameter, mm | Yield strength, R _e , N/mm ² | Tensile strength, R _m , N/mm ² | Relative elongation, A ₅ , % | Bending angle, degrees |
|-------|----------------------|--|--|---|------------------------|
| | | | | | |
| OB 37 | 6-12 | 255 | 360 | 25 | 180 |
| | 14-32 | 235 | | | |
| PC 52 | 8-14 | 355 | 510 | 20 | |
| | 16-28 | 345 | | | |
| | 32 | 335 | | | |

ST 009-2011 (Romania)

Product mix, standard sizes and weight:

| Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|---------------------------------------|----------------------|----------------------|
| Diameter, mm | Cross-sectional area, cm ² | | |
| 8 | 0,503 | 0,395 | ± 6,0 |
| 10 | 0,785 | 0,617 | |
| 12 | 1,130 | 0,888 | |
| 14 | 1,540 | 1,210 | |
| 16 | 2,010 | 1,580 | |
| 18 | 2,540 | 1,990 | |
| 20 | 3,140 | 2,470 | ± 4,5 |
| 22 | 3,800 | 2,984 | |
| 25 | 4,910 | 3,850 | |
| 28 | 6,160 | 4,840 | |
| 32 | 8,040 | 6,310 | |

Product delivery:

nominal diameter 8,0-32,0 mm - bars, nominal diameter 8,0-16,0 mm – coils 1100 - 2100 kg

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, $R_{p0.2}$, at least N/mm ² | Ratio, $R_m / R_{p0.2}$ | Full elongation at max. load, A_n , at least% | Relative elongation at fracture, A_{gt} , at least% | Bending angle, degrees |
|-------|---|-------------------------|---|---|------------------------|
| B500B | 500 | 1,08 min | 10,0 | 5,0 | 90 |
| B500C | | 1,15-1,35 | 16,0 | 7,5 | |

SM SR EN 10080:2014 (Moldova)

Product mix, standard sizes and weight:

| Diameter, mm | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|--------------|---------------------------------------|----------------------|----------------------|
| | | Cross-sectional area, cm ² | | |
| 8 | | 0,503 | 0,395 | ± 6,0 |
| 10 | | 0,785 | 0,617 | |
| 12 | | 1,130 | 0,888 | |
| 14 | | 1,540 | 1,210 | |
| 16 | | 2,010 | 1,580 | |
| 18 | | 2,540 | 1,990 | ± 4,5 |
| 20 | | 3,140 | 2,470 | |
| 22 | | 3,800 | 2,984 | |
| 25 | | 4,910 | 3,850 | |
| 28 | | 6,160 | 4,840 | |
| 32 | | 8,040 | 6,310 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R _{eH} , at least, MPa | Tensile strength, R _m , at least, MPa | Ratio, R _m / R _{eH} | Full elongation at max. load, A _{gt} , at least % | Bending angle and bending/unbending, degrees |
|-------|--|---|--|---|--|
| B500B | 500 | 550 | at least 1,08 | 5,0 | 180 ; 90/20 |

ISO 6935-2:2007, ES 262-2 / 2009 (Egypt)

Product mix, standard sizes and weight (bar):

| Nominal size | | Mass of 1 running meter of a bar (linear density), kg/m | | | Maximum tolerance, (strengthened tolerance), % | * minimum number of bars in a pack, pcs |
|---------------------|---------------------------------------|--|-------|-------|---|---|
| Diameter d_N , mm | Cross-sectional area, mm ² | Nominal | Min. | Max. | | |
| 8 | 50,3 | 0,395 | 0,365 | 0,425 | ±7,5 | 420 |
| 10 | 78,5 | 0,617 | 0,583 | 0,651 | ±5,5 | 270 |
| 12 | 113 | 0,888 | 0,839 | 0,937 | | 190 |
| 14 | 154 | 1,21 | 1,156 | 1,264 | ±4,5 | 139 |
| 16 | 201 | 1,58 | 1,509 | 1,651 | | 105 |
| 20 | 314 | 2,47 | 2,359 | 2,581 | | 66 |
| 25 | 491 | 3,85 | 3,715 | 3,985 | ±3,5 | 42 |
| 28 | 616 | 4,84 | 4,671 | 5,009 | | 34 |
| 32 | 804 | 6,31 | 6,089 | 6,531 | | 26 |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , MPa | Ratio, R_m/R_e | Relative elongation at fracture, (A_5), % | Full elongation at max. load, (A_{gt}), % |
|---------|--------------------------------|------------------|---|---|
| | | | within or at least | |
| B500BWR | 500 | 1,08 | 14 | 5,0 |

ES ISO 6935-2:2011 (Ethiopia)

Product mix, standard sizes and weight (bar):

| Diameter d_N , mm | Nominal size | | Mass of 1 running meter of a bar (linear density), kg/m | Maximum tolerance, % |
|---------------------|--------------|-------------------------------------|---|----------------------|
| | | Cross-sectional area, mm^2 | | |
| 8 | | 50,3 | 0,395 | +0/-5,0 |
| 10 | | 78,5 | 0,617 | |
| 12 | | 113 | 0,888 | |
| 14 | | 154 | 1,21 | +0/-4,0 |
| 16 | | 201 | 1,58 | |
| 20 | | 314 | 2,47 | |
| 25 | | 491 | 3,85 | |
| 32 | | 804 | 6,13 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , MPa | Tensile strength, R_m , MPa at least | Relative elongation, A_5 % | Bending angle and bending/unbending, degrees |
|-------|-----------------------------|---|------------------------------|--|
| E500 | 500 | 550 | 12-14 | 90/20, 180 |

SFS 1300:2020 (Finland)

Product mix, standard sizes and weight:

| Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|---------------------------------------|----------------------|----------------------|
| diameter, mm | cross-sectional area, mm ² | | |
| 8 | 50,3 | 0,395 | +6,0/-6,0 |
| 10 | 78,5 | 0,617 | |
| 12 | 113 | 0,888 | |
| 16 | 201 | 1,580 | +4,5/-4,5 |
| 20 | 314 | 2,470 | |
| 25 | 491 | 3,850 | |
| 32 | 804 | 6,310 | |

Product delivery:

- nominal diameter 8,0-32,0 mm for B500B grade and 10,0-32,0 mm for B500C grade – bars;
- nominal diameter 8,0-16,0 mm (B500B grade): coils 1100 - 2100 kg

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , at least MPa | Ratio, R_m / R_e | Full elongation at max. load, A_{gt} , at least % | Bending angle and bending/unbending, degrees |
|-------|--------------------------------------|--------------------|---|--|
| B500B | 500 | at least 1,08 | 5,0 | 180 ; 90/20 |
| B500C | | 1,15 - 1,35 | 7,5 | |

SS-EN 10080:2005, SS 212540:2014 (Sweden)

Product mix, standard sizes and weight:

| Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|--------------|---------------------------------------|----------------------|----------------------|
| diameter, mm | cross-sectional area, mm ² | | |
| 8 | 50,3 | 0,395 | +6,0/-6,0 |
| 10 | 78,5 | 0,617 | |
| 12 | 113 | 0,888 | |
| 14 | 154 | 1,21 | |
| 16 | 201 | 1,58 | +4,5/-4,5 |
| 20 | 314 | 2,47 | |
| 25 | 491 | 3,85 | |
| 28 | 616 | 4,83 | |
| 32 | 804 | 6,31 | |

Product delivery:

- nominal diameter 8,0-32,0 mm for K500B-T grade and 10,0-32,0 mm for K500C-T grade – bars;
- nominal diameter 8,0-16,0 mm (K500B-TR grade): coils 1100 - 2100 kg.

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , MPa | Ratio, R_m / R_e | Full elongation at max. load, A_{gt} , at least % | Bending angle and bending/unbending, degrees |
|----------|-----------------------------|--------------------|---|--|
| K500B-T | 400-600 | at least 1,08 | 5,0 | 180 ; 90/20 |
| K500B-TR | | | | |
| K500C-T | | 1,15 - 1,35 | 7,5 | |

NS-EN 10080:2005, NS 3576-2:2012, NS 3576-3:2012 (Norway)

Product mix, standard sizes and weight:

| diameter, mm | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|-----------------|---------------------------------------|--|----------------------|-------------------------|
| | cross-sectional area, mm ² | | | |
| 8 | 50,3 | | 0,395 | +6,0/-6,0 |
| 10 | 78,5 | | 0,617 | |
| 12 | 113 | | 0,888 | |
| 14 | 154 | | 1,21 | |
| 16 | 201 | | 1,58 | +4,5/-4,5 |
| 20 | 314 | | 2,47 | |
| 28 | 616 | | 4,83 | |
| 32 | 804 | | 6,31 | |

Product delivery:

- nominal diameter 8,0-32,0 mm for B500NB grade and 10,0-32,0 mm for B500NC grade: bars;
- nominal diameter 8,0-16,0 mm (B500NB grade): coils 1100 - 2100 kg.

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_{eH} , at least, MPa | Tensile strength, R_m , at least, MPa | Ratio, R_m / R_{eH} | Full elongation at max. load, A_{gt} , at least % | Bending angle and bending/unbending, degrees |
|--------|---|---|--------------------------|--|--|
| B500NB | 500 | 550 | at least 1,08 | 5,0 | 180 ; 90/20 |
| B500NC | | 600 | 1,15 - 1,35 | 7,5 | |

SS 560:2016 (Singapore)

Product mix, standard sizes and weight:

| Product delivery | Nominal size | | Mass per meter, kg/m | Maximum tolerance, % |
|------------------|--------------|---------------------------------------|----------------------|----------------------|
| | diameter, mm | cross-sectional area, mm ² | | |
| Coil, bar | 8 | 50,3 | 0,395 | ± 6,0 |
| | 10 | 78,5 | 0,617 | |
| | 12 | 113 | 0,888 | |
| | 16 | 201 | 1,58 | |
| Bar | 20 | 314 | 2,47 | ± 4,5 |
| | 22 | 380 | 2,98 | |
| | 25 | 491 | 3,85 | |
| | 28 | 616 | 4,83 | |
| | 32 | 804 | 6,31 | |

Product delivery:

- nominal diameter 8,0-32,0 mm (grade B500B/B500C) – bars;
- nominal diameter 8,0-16,0 mm (grade B500B), 8,0-12,0 mm (grade B500C): coils 1100 - 2100 kg.

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , at least, N/mm ² | Ratio, R_m / R_e | Full elongation at max. load, A_{gt} , at least, % | Bending angle with unbending, degrees |
|-------|---|--------------------------|--|---------------------------------------|
| B500B | 500 | Min. 1,08 | 5,0 | 90/20 |
| B500C | | $1,15 \leq \dots < 1,35$ | 7,5 | |

AS/NZS 4671:2019 (Australia/New Zealand)

Rebar

Wire rod

Section

Billet

Pig iron

Product mix, standard sizes and weight:

| Product delivery: | Nominal size | | Mass of 1 running meter of a bar (linear density), kg/m | Maximum tolerance, % |
|-------------------|------------------------|--|--|----------------------|
| | diameter d_N , mm | cross-sectional area, mm ² | | |
| Coil, bar | 8 | 50,3 | 0,395 | ±4,5 |
| | 10 | 78,5 | 0,617 | |
| | 12 | 113 | 0,888 | |
| | 16 | 201,1 | 1,58 | |
| Bar | 20 | 314,2 | 2,47 | |
| | 24 | 452,4 | 3,55 | |
| | 25 | 490,9 | 3,85 | |
| | 28 | 615,7 | 4,83 | |
| | 32 | 804,2 | 6,31 | |

* By agreement with the client, production with the guaranteed minimum quantity of bars in a pack (pack up to 2 tons, bar length 12.0 m -0/+100 mm).

Mechanical properties:

| Grade | Yield strength, R_e , at least, N/mm ² | Ratio, R_m / R_e | Full elongation at max. load, A_{gt} , at least, % | Bending angle, degrees |
|-------|--|-----------------------|---|---------------------------|
| D250N | 250 | Min. 1,08 | 5,0 | 90 |
| D500N | 500 | | | |



Wire rod



Wire rod

Section

Billet

Pig iron

The company produces steel wire rod according to interstate and national standards :

| | |
|---|---|
| Carbon steel wire rod of common quality | DSTU 2770-94 (GOST 30136-95) |
| Carbon steel wire rod for drawing into the wire | ASTM A 510M |
| Carbon steel wire rod of round section | SOU MPP 77.140-236:2008 |
| Wire rod for steel ropes | DSTU 3683-98, ASTM A 510M, ISO 16120 |
| Low carbon and alloy wire rod for welding wire | TU 14-15-345-94, TU 14-15-346-94, TU U 27.1-4-548-2003, TU U 27.1-24432974-020:2010 EN ISO 14341:2011 |

Technical characteristics for coils of wire rod

| Wire rod diameter, mm | Coil weight, kg | Coil height, mm | Outer diameter of coil, mm | Binner diameter of coil, mm |
|--------------------------|--------------------|--------------------|-------------------------------|--------------------------------|
| 5,5-16,0 | 1100 - 2100 | up to 1750 | up to 1250 | at least 750 |

Packing:

By wire rod with a diameter of 5.5-8.0 mm in 4 or 8 radial ties.

Labelling:

Two labels are attached to each coil, which include the following information :

- trademark of the manufacturer;
- steel grade;
- number of heat and batch;
- size (diameter of wire rod);
- coil weight, kg;
- country of destination.

CARBON STEEL WIRE ROD OF COMMON QUALITY (DSTU 2770-94 / GOST 30136-95)

Basic chemical composition

| Steel grade | Mass content of elements, % | | | | | | | |
|-------------|-----------------------------|-----------|-----------|------|------|-----------|-----|-----|
| | C | Mn | Si | S | P | Cr max | Ni | Cu |
| Ст1кп | 0,06-0,12 | 0,25-0,50 | max 0,05 | | | | | |
| Ст1пс | 0,06-0,12 | 0,25-0,50 | 0,05-0,15 | | | | | |
| Ст2кп | 0,09-0,15 | 0,25-0,50 | max 0,05 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст2пс | 0,09-0,15 | 0,25-0,50 | 0,05-0,15 | | | | | |
| Ст3кп | 0,14-0,22 | 0,30-0,60 | max 0,05 | | | | | |
| Ст3пс | 0,14-0,22 | 0,40-0,65 | 0,05-0,15 | | | | | |

Maximum tolerance:

by diameter +0,3/-0,5 mm;

by ovality - up to 50 % of the sum of the maximum tolerances.

Mechanical properties

| Steel grade | Tensile strength at fracture, N/mm ² , max | Relative contraction at fracture, %, min |
|-------------|---|--|
| Ст1кп | 470 | 66 |
| Ст1пс | 470 | 66 |
| Ст2кп | 470 | 60 |
| Ст2пс | 470 | 60 |
| Ст3кп | 540 | 60 |
| Ст3пс | 540 | 60 |

CARBON STEEL WIRE ROD FOR DRAWING INTO THE WIRE / ASTM A 510M CARBON STEEL WIRE ROD OF ROUND SECTION / SOU MPP 77.140-236:2008

Basic chemical composition

| Steel grade* | Mass content of elements, % | | | | | | | |
|--------------|-----------------------------|-----------|----|-------|-------|--------|--------|--------|
| | C | Mn | Si | S max | P max | Cr max | Ni max | Cu max |
| SAE1006 | max 0,08 | 0,25-0,45 | | | | | | |
| SAE1008 | max 0,10 | 0,30-0,50 | | | | | | |
| SAE1010 | 0,08-0,13 | 0,30-0,60 | | | | | | |
| SAE1011 | 0,08-0,13 | 0,60-0,90 | | | | | | |
| SAE1012 | 0,10-0,15 | 0,30-0,60 | | | | | | |
| SAE1013 | 0,11-0,16 | 0,50-0,80 | | | | | | |
| SAE1015 | 0,13-0,18 | 0,30-0,60 | | | | 0,10 | 0,10 | 0,10 |
| SAE1016 | 0,13-0,18 | 0,60-0,90 | * | 0,05 | 0,04 | | | |
| SAE1017 | 0,15-0,20 | 0,30-0,60 | | | | | | |
| SAE1018 | 0,15-0,20 | 0,60-0,90 | | | | | | |
| SAE1019 | 0,15-0,20 | 0,70-0,1 | | | | | | |
| SAE1020 | 0,18-0,23 | 0,30-0,60 | | | | | | |
| SAE1021 | 0,18-0,23 | 0,60-0,90 | | | | | | |
| SAE1022 | 0,18-0,23 | 0,70-1,0 | | | | - | - | - |
| SAE1023 | 0,20-0,25 | 0,30-0,60 | | | | - | - | - |

*Si content is set in agreement with the client.

*By agreement with the client, microalloying of the wire rod with boron is allowed within the stipulated limits

Maximum tolerance:

- by diameter $\pm 0,4$ mm;
- by ovality up to 0,60 mm.

Mechanical properties (Si = up to 0,05 %):

| Steel grade | Tensile strength at fracture, N/mm ² , max | Relative elongation, %, $\Delta 100$, min |
|-------------|---|--|
| SAE1006 | 420 | 22 |
| SAE1008 | 430 | 22 |
| SAE1010 | 450 | 21 |
| SAE1011 | 460 | 20 |
| SAE1012 | 460 | 20 |
| SAE1013 | 470 | 19 |
| SAE1015 | 490 | 18 |
| SAE1016 | 500 | 17 |
| SAE1017 | 510 | 17 |
| SAE1018 | 520 | 17 |
| SAE1020 | 530 | 16 |
| SAE1021 | 540 | 16 |
| SAE1022 | 540 | 16 |
| SAE1023 | 550 | 16 |

Wire rod

Section

Billet

Pig iron

WIRE ROD FOR STEEL ROPES (DSTU 3683-98, and its analogues on ASTM A 510M and ISO 16120)

Size mix: 5,5-12,5 mm

Basic chemical composition (DSTU 3683-98)

| Steel grade | Mass content of elements, % | | | | | | | | | | |
|-------------|-----------------------------|-----------|------------|--------|--------|-------|-----|-----|------|-------|------|
| | C | Mn | Si | S | P | S + P | Cr | Ni | Cu | N | As |
| 35 | 0,32-0,40 | | | | | | | | | | |
| 40 | 0,37-0,45 | | | | | | | | | | |
| 45 | 0,42-0,50 | | | | | | | | | | |
| 50 | 0,47-0,55 | | | | | | | | | | |
| 55 | 0,52-0,60 | | | | | | | | | | |
| 60 | 0,57-0,65 | 0,40-0,70 | 0,25-0,45* | 0,03** | 0,03** | 0,055 | 0,1 | 0,1 | 0,15 | 0,008 | 0,08 |
| 65 | 0,62-0,70 | | | | | | | | | | |
| 70 | 0,67-0,75 | | | | | | | | | | |
| 75 | 0,72-0,80 | | | | | | | | | | |
| 80 | 0,77-0,85 | | | | | | | | | | |
| 85 | 0,82-0,90 | | | | | | | | | | |

* Production of products with Si content: 0.17-0.30 from ConCast billet is possible

** For BR grade S and P content up to 0,025%

Maximum tolerance:

- Ø5,5-7,5 – by diameter +0,3/- 0,5 mm;
- Ø7,5-12,5 – by diameter +0,4/- 0,4 mm;
- by ovality – up to 50 % of the sum of the maximum tolerances.

Basic chemical composition (DSTU 3683-98)

| Steel grade | Mass content of elements, % | | | | |
|-------------|-----------------------------|-----------|----|------|------|
| | C | Mn | Si | S | P |
| SAE 1035 | 0,32-0,38 | 0,60-0,90 | | | |
| SAE 1040 | 0,37-0,44 | 0,60-0,90 | | | |
| SAE 1045 | 0,43-0,50 | 0,60-0,90 | | | |
| SAE 1050 | 0,48-0,55 | 0,60-0,90 | | | |
| SAE 1055 | 0,50-0,60 | 0,60-0,90 | | | |
| SAE 1060 | 0,55-0,65 | 0,60-0,90 | * | 0,05 | 0,04 |
| SAE 1065 | 0,60-0,70 | 0,60-0,90 | | | |
| SAE 1070 | 0,65-0,75 | 0,60-0,90 | | | |
| SAE 1075 | 0,70-0,80 | 0,40-0,70 | | | |
| SAE 1080 | 0,75-0,88 | 0,60-0,90 | | | |
| SAE 1085 | 0,80-0,93 | 0,70-1,00 | | | |

* Si content is set in agreement with the client

Basic chemical composition (EN ISO 16120)

| Steel grade | Mass content of elements, % | | | | | | | | | | |
|-------------|-----------------------------|-----------|-----------|-------|------|------|------|------|------|------|-------|
| | C | Mn | Si | S | P | Cr | Ni | Mn | Cu | Al | Ni |
| C70D2 | 0,68-0,72 | | | | | | | | | | |
| C72D2 | 0,70-0,74 | | | | | | | | | | |
| C76D2 | 0,74-0,78 | 0,50-0,70 | 0,10-0,30 | 0,025 | 0,02 | 0,10 | 0,10 | 0,03 | 0,15 | 0,01 | 0,007 |
| C78D2 | 0,76-0,80 | | | | | | | | | | |
| C80D2 | 0,78-0,82 | | | | | | | | | | |
| C82D2 | 0,80-0,84 | | | | | | | | | | |

The level of mechanical properties is discussed with the client

LOW CARBON AND ALLOY WIRE ROD FOR WELDING WIRE ON TU 14-15-345-94, TU 14-15-346-94, TU U 27.1-4-548-2003, TU U 27.1-24432974-020:2010

Basic chemical composition

| Steel grade | Mass content of elements, % | | | | | | | | | |
|---------------|-----------------------------|-----------|-----------|-------|-------|-----------|-----------|------|------|-----|
| | C | Mn | Si | S | P | Cr max | Ni | Cu | Al | Zr |
| Св08 | max 0,1 | 0,35-0,60 | 0,03 | 0,04 | 0,04 | 0,15 | 0,30 | 0,15 | 0,01 | - |
| Св08А | max 0,1 | 0,35-0,60 | 0,03 | 0,03 | 0,03 | 0,12 | 0,25 | 0,15 | 0,01 | - |
| Св08Г1Н МА | 0,09 | 1,0-1,50 | 0,20-0,45 | 0,015 | 0,02 | 0,3 | 0,5-0,7 | 0,25 | 0,05 | - |
| Св08ГС | up to 0,10 | 1,40-1,70 | 0,60-0,85 | 0,025 | 0,030 | 0,30 | 0,25 | 0,25 | - | - |
| Св08Г2С | 0,05-0,11 | 1,80-2,10 | 0,70-0,95 | 0,025 | 0,03 | 0,2 | 0,25 | 0,25 | 0,05 | - |
| Св08Г2СЦ | 0,05-0,12 | 1,60-2,10 | 0,70-1,0 | 0,025 | 0,03 | 0,2 | 0,25 | 0,25 | - | 0,1 |
| Св08ГА | max 0,1 | 0,80-1,10 | 0,06 | 0,025 | 0,03 | 0,1 | 0,25 | 0,25 | - | - |
| Св-07ХМ | 0,05-0,09 | 0,30-0,55 | 0,12-0,40 | 0,030 | 0,025 | 0,75-1,15 | 0,30 | 0,25 | - | - |
| Св-07Г | | 0,70-1,00 | 0,06 | | | 0,10 | | | | |
| Св-09НМ | 0,07-0,11 | 0,35-0,65 | 0,12-0,35 | 0,030 | 0,025 | 0,20 | 0,90-1,25 | 0,25 | - | - |

Maximum tolerance:

- by diameter +0,3/- 0,5 mm;

- by ovality – up to 50 % of the sum of the maximum tolerances. .

Mechanical properties:

| Steel grade | Tensile strength at fracture, N/mm ² , up to | Relative contraction, % at least |
|-------------|---|----------------------------------|
| Св08 | 420 | 60 |
| Св08А | 420 | 60 |
| Св08Г1НМА | 850 | 48 |
| *Св08ГС | 640 | 50 |
| Св08Г2С | 690 | 48 |
| Св08Г2СЦ | 850 | 48 |
| Св08ГА | 735 | 48 |
| Св-07ХМ | | |
| Св-07Г | | |
| Св-09НМ | | |

* change of mechanical properties of a wire rod taking into account requirements of the consumer is allowed

LOW CARBON AND ALLOY WIRE ROD FOR WELDING WIRE ON EN ISO 14341:2011

Basic chemical composition

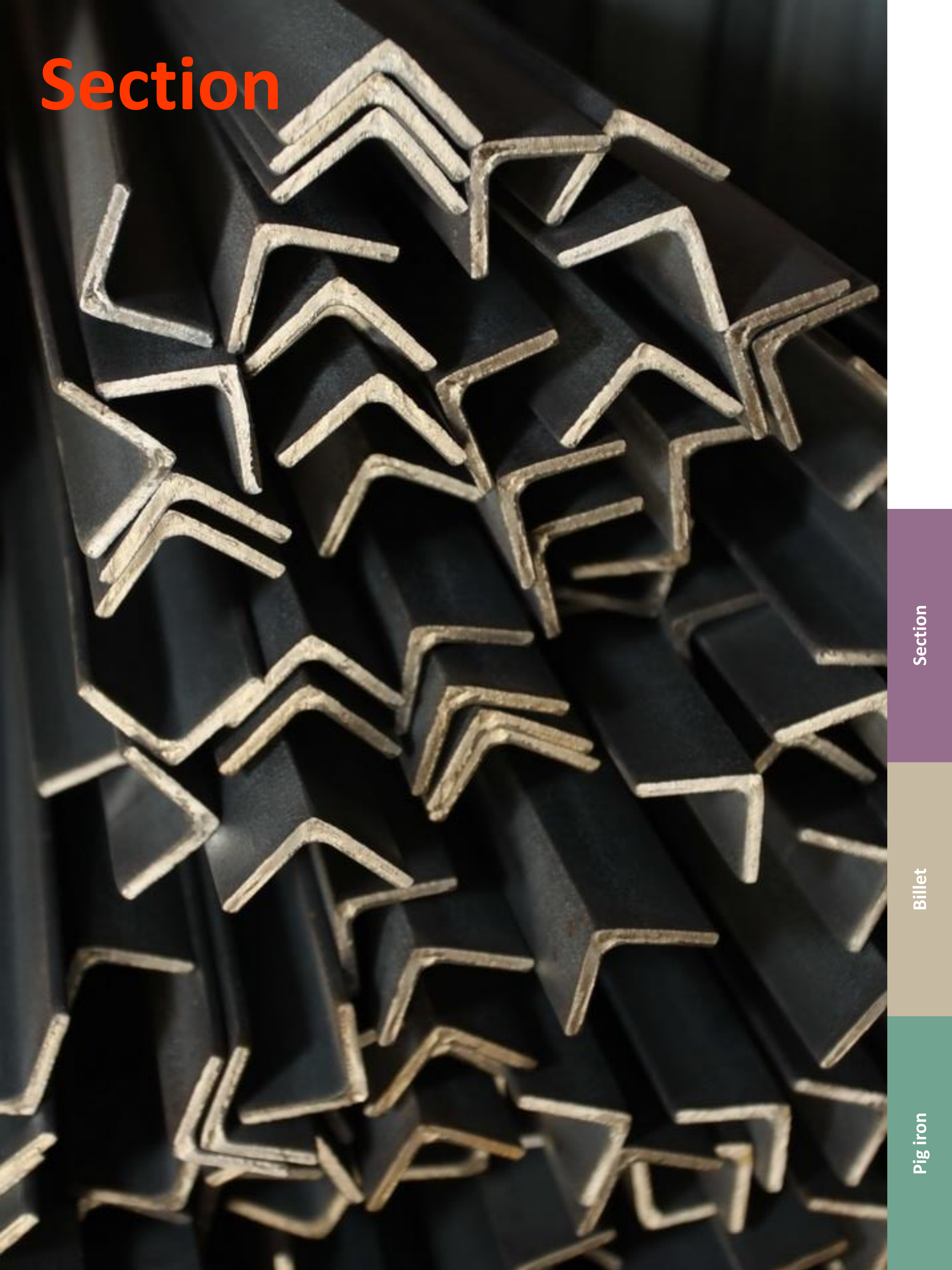
| Steel grade | Mass content of elements, % | | | | | | | | |
|-------------|-----------------------------|-----------|-----------|-------|-------|------|------|------|------|
| | C | Mn | Si | S | P | Cr | Ni | Cu | Al |
| 3Si1 | 0,06-0,14 | 1,30-1,60 | 0,70-0,90 | 0,025 | 0,025 | 0,15 | 0,15 | 0,35 | 0,02 |
| 4Si1 | | 1,60-1,90 | 0,80-1,20 | | | | | | |

Mechanical properties:

| Steel grade | Tensile strength at fracture, N/mm ² , up to | Relative contraction, % at least |
|-------------|---|----------------------------------|
| 3Si1 | 580 | 65 |
| 4Si1 | 600 | 60 |



Section



Section

Billet

Pig iron

HOT ROLLED STEEL STRIP

DSTU 4747:2007 / GOST 103-2006 / EN 10025-02:2019

Size mix

| Width, mm | Thickness (height), mm* | | | | | | |
|-----------|-------------------------|---|---|---|---|----|----|
| | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
| 20 | + | + | | | | | |
| 22 | | | + | | | | |
| 25 | + | + | + | | | | |
| 30 | + | + | + | + | + | + | |
| 32 | | + | + | | | | |
| 35 | + | + | + | | | | |
| 40 | + | + | + | | + | + | |
| 45 | | + | + | | + | + | + |
| 50 | + | + | + | | + | + | |
| 60 | + | + | + | | + | + | + |
| 63 | | | + | | | | |
| 65 | | | + | | | | |
| 70 | | + | + | | + | + | |
| 75 | | | + | | | | |

* Upon agreement with the client, it is possible to produce a strip with a different thickness

Maximum tolerance:

by strip width: from 20 to 60 mm +0,5/-1,0 mm;
63 mm +0,5/-1,3 mm;
70-75 mm +0,5/-1,4 mm;

by strip thickness: from 4 to 6 mm +0,3/-0,5 mm;
from 6 to 12 mm +0,2/-0,5 mm.

Mechanical properties (DSTU 4484:2005/GOST 535-2005)

| Steel grade | Tensile strength at fracture, N/mm ² , at least | Yield strength, N/mm ² , at least | Relative elongation, %, at least | Cold bending in 180° | Impact strength |
|-------------|--|--|----------------------------------|----------------------|-----------------|
| Ст3пс | 370 | 245 | 26 | + | + |

Mechanical properties (EN 10025-2:2019)

| Steel grade | Tensile strength at fracture, N/mm ² , at least | Yield strength, N/mm ² , at least | Relative elongation, %, at least | Impact strength |
|-------------|--|--|----------------------------------|-----------------|
| S235JR | 360-510 | 235 | 26 | + |
| S275JR | 410-560 | 275 | 23 | + |

Packing: packs weighing up to 5 tons, length from 6 to 12 m (0/+100 mm).

HOT ROLLED SQUARE BAR

DSTU 4746:2007 / GOST 2591-2006 / EN 10025-02:2019

Size mix

| Size, mm | Maximum tolerance, mm | Curvature of bars, %, max |
|-----------|-----------------------|---------------------------|
| 10x10 | +0,3 / -0,5 | 0,5 % of length |
| 11,5x11,5 | | |
| 12x12 | | |
| 14x14 | | |
| 16x16 | | |
| 20x20 | +0,4 / -0,5 | |
| 22x22 | | |

Mechanical properties (DSTU 4484:2005/GOST 535-2005)

| Steel grade | Tensile strength at fracture, N/mm ² | Yield strength, N/mm ² at least | Relative elongation, % | Cold bending in 180° | Impact strength |
|-------------|---|---|------------------------|----------------------|-----------------|
| Ст3пс | 370 | 245 | 26 | + | + |

Mechanical properties (EN 10025-2:2019)

| Steel grade | Tensile strength at fracture, N/mm ² , at least | Yield strength, N/mm ² , at least | Relative elongation, %, at least | Impact strength |
|-------------|--|--|----------------------------------|-----------------|
| S235JR | 360-510 | 235 | 26 | + |
| S275JR | 410-560 | 275 | 23 | + |

Packing: packs weighing up to 5 tons, length from 6 to 12 m (0/+100 mm).

HOT ROLLED CARBON STEEL SECTION BAR (EQUAL ANGLE) ON DSTU 2251-93 (GOST 8509-93) / EN 10025-02:2019

Size mix

| Size, mm | Wing width, mm | | | | Maximum tolerance, mm | | Angle curvature, % 1 m |
|----------|----------------|---|---|---|-----------------------|-------------------|---------------------------|
| | 3 | 4 | 5 | 6 | on wing width | on wing thickness | |
| 20x20 | | + | | | | | |
| 25x25 | + | + | | | | | |
| 30x30 | + | + | | | | | |
| 32x32 | + | + | | | ± 1 | +0,3 | 0,4 % of length |
| 35x35 | + | + | | | | -0,4 | |
| 40x40 | + | + | + | | | | |
| 45x45 | | + | + | | | | |
| 50x50 | | | + | | | | |
| 63x63 | | | + | + | ±1,5 | +0,3 | |
| 75x75 | | | + | + | | | -0,5 |

Mechanical properties (DSTU 4484:2005/GOST 535-2005)

| Steel grade | Tensile strength at fracture, N/mm ² | Yield strength, N/mm ² at least | Relative elongation, % | Cold bending in 180° | Impact strength |
|-------------|---|---|------------------------|----------------------|-----------------|
| Ст3пс | 370 | 245 | 26 | + | + |
| Ст5пс | 490 | 285 | 20 | + | + |

Mechanical properties (EN 10025-2:2019)

| Steel grade | Tensile strength at fracture, N/mm ² , at least | Yield strength, N/mm ² , at least | Relative elongation, %, at least | Impact strength |
|-------------|--|--|----------------------------------|-----------------|
| S235JR | 360-510 | 235 | 26 | + |
| S275JR | 410-560 | 275 | 23 | + |
| S355JR | 510-680 | 355 | 22 | + |

Packing:

«lock» - packs weighing up to 5 tons, length from 6 to 12 m (+100 mm).



CARBON AND ALLOY HIGH QUALITY AND STRUCTURAL SECTION STEEL FOR COLD EXTRUSION AND HEADING ON DSTU 3684-98

Size mix

| Diameter, mm | Maximum tolerance, mm | Bars curvature, %, max |
|--------------|-----------------------|------------------------|
| 5,5-19 | +0,3 -0,5 | 0,5 % of length |
| 20-25 | +0,4 -0,5 | |
| 26-29 | +0,3 -0,7 | |
| 30-32 | +0,4 -0,7 | |

HOT ROLLED SECTION ROUND ON DSTU 4738:2007/ GOST 2590-2006

| Diameter, mm | Maximum tolerance, mm | Bars curvature, %, max |
|--------------|-----------------------|------------------------|
| 5,5-19 | +0,3 / -0,5 | 0,5 % of length |
| 20-25 | +0,4 / -0,5 | |
| 26-29 | +0,3 / -0,7 | |
| 30-32 | +0,4 / -0,7 | |

Mechanical properties (DSTU 4484:2005 / GOST 535-2005)

| Steel grade | Tensile strength at fracture, N/mm ² , at least | Yield strength, N/mm ² , at least | Relative elongation, %, at least | Cold bending in 180° | Impact strength |
|-------------|--|--|----------------------------------|----------------------|-----------------|
| Ст3кп | 360 | 235 | 27 | + | + |
| Ст3пс | 370 | 245 | 26 | + | + |
| Ст5пс | 490 | 285 | 20 | + | + |

Packing:

- ØØ 10-32 mm – packs weighing up to 5 tons, length from 6 to 12 m (-100/+100 mm).
- ØØ 5,5-14 mm – coils weighing 1100-2100 kg;
- ØØ 14-32 mm – coils weighing 1100-2100 kg.

Mass content of elements and maximum tolerances in chemical composition:

| Steel grade | C | Mn | Si | Cr | S | P | Al |
|-------------|-----------|-----------|------------|---------|-------|-------|-----------|
| 08кп | 0,05-0,12 | 0,25-0,50 | up to 0,03 | 0,1 | 0,035 | 0,035 | - |
| 10кп | 0,07-0,14 | | | 0,25 | | | - |
| 15кп | 0,12-0,19 | | | 0,25 | | | - |
| 20кп | 0,17-0,24 | | | 0,25 | | | - |
| 20X | 0,17-0,23 | 0,35-0,60 | 0,17-0,30 | 0,7-1,0 | 0,035 | 0,035 | - |
| 20ЮА | 0,18-0,23 | | up to 0,10 | 0,25 | | | 0,02-0,08 |
| 30X | 0,24-0,32 | | 0,17-0,30 | - | | | |
| 35X | 0,31-0,39 | | 0,17-0,30 | - | | | |
| 35XM | 0,32-0,40 | 0,40-0,70 | 0,17-0,37 | 0,8-1,1 | 0,035 | 0,035 | - |
| 40X | 0,36-0,44 | 0,50-0,80 | 0,17-0,30 | | | | - |

| Steel grade | Mass content of elements and maximum tolerances in chemical composition, % | | | | | |
|-------------------|--|----------------|-----------|----------------|--------|--------|
| | C | Mn | Si | Cr | S | P |
| 35X | 0,31-0,39 | 0,50-0,80 | 0,17-0,30 | 0,8-1,1* | up to | |
| 35XM | 0,32-0,40 | 0,40-0,70 | 0,17-0,37 | 0,8-1,1 | 0,035 | 0,035 |
| 40X | 0,36-0,44 | 0,50-0,80 | 0,17-0,30 | 0,8-1,1* | | |
| In finished goods | +0,01 -0,01 | +0,02 -0,02 | ±0,01 | +0,02 -0,02 | +0,005 | +0,005 |

- Note: if the mass fraction of chromium is more than 1%, tolerances of +0.05% are allowed

Packing:

- ØØ 5,5-14 mm – coils weighing 1100-2100 kg.
- ØØ 14-32 mm - coils weighing 1100-2100 kg.

CARBON HIGH QUALITY STRUCTURAL SECTION CALIBRATED STEEL WITH SPECIAL TREATMENT OF SURFACE ON GOST 1050-88

Size mix

| Diameter, mm | Maximum tolerance, mm | Bars curvature, %, max |
|--------------|-----------------------|------------------------|
| 5,5-19 | +0,3 / -0,5 | 0,5 % of length |
| 20-25 | +0,4 / -0,5 | |
| 26-29 | +0,3 / -0,7 | |
| 30-32 | +0,4 / -0,7 | |

Mass content of elements and maximum tolerances in chemical composition

| Steel grade | C | Mn | Si | Cr | S | P |
|-------------|-----------|-----------|-----------|------|-------|-------|
| 10 | 0,07-0,14 | 0,35-0,65 | | 0,15 | max | |
| 15 | 0,12-0,19 | 0,35-0,65 | | | | |
| 20 | 0,17-0,24 | 0,35-0,65 | | | | |
| 25 | 0,22-0,30 | 0,50-0,80 | | | | |
| 30 | 0,27-0,35 | 0,50-0,80 | 0,17-0,37 | | | |
| 35 | 0,32-0,40 | 0,50-0,80 | | 0,25 | 0,040 | 0,035 |
| 40 | 0,37-0,45 | 0,50-0,80 | | | | |
| 45 | 0,42-0,50 | 0,50-0,80 | | | | |
| 50 | 0,47-0,50 | 0,50-0,80 | | | | |
| 55 | 0,52-0,60 | 0,50-0,80 | | | | |

Packing:

- ØØ 5,5-14 mm – bundles weighing 1100-2100 kg;
- ØØ 14-32 mm – coils weighing 1100-2100 kg

CARBON AND ALLOY SPRING SECTION STEEL ON DSTU 8429:2015

Size mix

| Diameter, mm | Maximum tolerance, mm |
|--------------|-----------------------|
| 6,0-19,0 | +0,3 -0,5 |
| 20,0-23,0 | +0,4 -0,5 |

Mass content of elements and maximum tolerances in chemical composition:

| Steel grade | Mass content of elements, % | | | | | | | | |
|-------------|-----------------------------|---------|---------|-------|-------|--------|------|------|-------|
| | C | Mn | Si | Cr | S | P | Ni | Cu | N |
| 60C2Г | 0,55-0,65 | 0,7-1,0 | 1,8-2,2 | 0,30 | 0,035 | 0,035 | 0,40 | 0,30 | 0,008 |
| 55C2 | 0,52-0,60 | 0,6-0,9 | 1,5-2,0 | 0,30 | 0,035 | 0,035 | 0,40 | 0,30 | 0,008 |
| 60C2A | 0,58-0,63 | 0,6-0,9 | 1,6-2,0 | 0,30 | 0,025 | 0,025 | 0,40 | 0,30 | 0,008 |
| Tolerances* | ±0,01 | ±0,02 | ±0,05 | ±0,02 | - | ±0,005 | - | - | - |

*apply on 60C2A grade

Mechanical properties:

| Steel grade | Tensile strength at fracture, N/mm ² | Yield strength, N/mm ² | Relative elongation, % | Relative contraction, % |
|-------------|---|-----------------------------------|------------------------|-------------------------|
| | | at least | | |
| 60C2Г | 1470 | 1325 | 6 | 25 |
| 55C2 | 1270 | 1175 | 6 | 30 |
| 60C2A | 1570 | 1375 | 6 | 20 |

Packing:

∅∅ 14-32 mm – packs weighing up to 5 tons, length from 6 to 12 m (-100/+100 mm);
∅∅ 6-23 mm – coils weighing 1100-2100 kg.

HOT-ROLLED PRODUCTS MADE OF STRUCTURAL STEEL TUV NORD ON DIN EN 10025-2

Basic chemical composition

| Steel grade | C | Mn | Si | S | P | N | Cu | Ceq |
|-------------|------|------|----|-------|-------|-------|------|------|
| | max | | | | | | | |
| S235JO | 0,17 | 1,40 | - | 0,030 | 0,030 | 0,012 | 0,55 | 0,35 |
| S235J2 | 0,17 | 1,40 | - | 0,025 | 0,025 | - | 0,55 | 0,35 |
| S235JR | 0,17 | 1,40 | - | 0,035 | 0,035 | 0,012 | 0,55 | 0,35 |
| S275JO | 0,18 | 1,50 | - | 0,030 | 0,030 | 0,012 | 0,55 | 0,40 |
| S275J2 | 0,18 | 1,50 | - | 0,025 | 0,025 | - | 0,55 | 0,40 |
| S275JR | 0,21 | 1,50 | - | 0,035 | 0,035 | 0,012 | 0,55 | 0,40 |

Mechanical properties:

| Клас | Tensile strength at fracture, R_m , N/mm ² | Yield strength, N/mm ² , at least | | Relative elongation, A_5 , %, at least | Impact strength, | |
|--------|---|--|-------------------------|--|------------------|--------|
| | | $\leq 16\text{mm}$ | $> 16 \leq 32\text{mm}$ | | t, °C | J, min |
| | | | | | | |
| S235JO | 360-510 | 235 | 225 | - | 0 | 27 |
| S235J2 | 360-510 | 235 | 225 | 24 | -20 | 27 |
| S235JR | 360-510 | 235 | 225 | 26 | 20 | 27 |
| S275JO | 410-560 | 275 | 265 | 23 | 0 | 27 |
| S275J2 | 430-580 | 275 | 265 | 21 | -20 | 27 |
| S275JR | 410-560 | 275 | 265 | 23 | 20 | 27 |

Packing:

∅∅ 14-32 mm – packs weighing up to 5 tons, length from 6 to 12 m (-100/+100 mm);
∅∅ 6-23 mm – coils weighing 1100-2100 kg.

HOT ROLLED ROUND BAR FOR GENERAL PURPOSE ON EN 10060

Size mix

| Diameter, mm | Maximum tolerance, mm | Bars curvature, %, max |
|--------------|-----------------------|------------------------|
| 10-15 | ±0,4 | 0,4 % of length |
| 16-25 | ±0,5 | |
| 26-32 | ±0,6 | |

HOT ROLLED SQUARE FOR GENERAL PURPOSE ON EN 10059

Size mix

| Diameter, mm | Maximum tolerance, mm | Bars curvature, % max |
|--------------|-----------------------|-----------------------|
| 10x10 | ±0,4 | 0,4 % of length |
| 12x12 | | |
| 14x14 | | |
| 16x16 | ±0,5 | |
| 20x20 | | |
| 22x22 | | |

HOT ROLLED STRIP FOR GENERAL PURPOSE ON 10058

Size mix:

| Width, mm | Thickness (height), mm* | | | | | | |
|-----------|-------------------------|---|---|---|---|----|----|
| | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
| 20 | + | + | | | | | |
| 22 | | | + | | | | |
| 25 | + | + | + | | | | |
| 30 | + | + | + | + | + | + | |
| 32 | | + | + | | | | |
| 35 | + | | + | | | | |
| 40 | + | + | + | | + | + | |
| 45 | | + | + | | + | + | + |
| 50 | + | + | + | | + | + | |
| 60 | + | + | + | | + | + | + |
| 70 | | | | | + | + | |
| 75 | | | + | | | | |

*By agreement with the client, a different strip thickness is possible

Maximum tolerance:

By width: 20-40 mm ±0,75 mm
45-70 mm ±1,0 mm

By thickness: ±0,5 mm

Curvature: 0,4% of length

STEEL EQUAL ANGLE ON EN 10056-2

Size mix :

| Size, mm | Wing thickness, mm | | | Maximum tolerance, mm | | Angle curvature, % 1 m |
|----------|--------------------|---|---|-----------------------|-------------------|---------------------------|
| | 3 | 4 | 5 | on wing width | on wing thickness | |
| 20x20 | | + | | | | |
| 25x25 | + | + | | | | |
| 30x30 | + | + | | | | |
| 32x32 | + | + | | | | |
| 35x35 | + | + | | ±1 | ±0,50 | 0,4 % of length |
| 38x38 | + | + | + | | | |
| 40x40 | + | + | + | | | |
| 45x45 | | + | + | | | |
| 50x50 | | + | + | | | |

Billet



Billet

Pig iron

SQUARE HOT ROLLED BILLET

TU U 27.1-00190319-1307-2003

Sizes: 80x80, 100x100, 125x125, 130x130, 150x150

Nominal size and the estimated weight of 1 running meter:

| Size, mm | The maximum tolerance on the side of the square, mm | The difference between the diagonals, mm | Mass per meter, kg | Non-squareness of ends, max, mm | Billet curvature, max, % of length | Billet twisting, max, degrees |
|----------|---|--|--------------------|---------------------------------|------------------------------------|-------------------------------|
| 150x150 | ± 5,0 | 7,0 | 173,65 | 8,0 | 1,5 | 18,0 |
| 130x130 | | | 129,69 | | | |
| 125x125 | ± 4,0 | 5,6 | 120,47 | | | |
| 110x110 | | | 92,80 | | | |
| 100x100 | ± 3,6 | 5,0 | 76,98 | 6,0 | | |

Basic chemical composition

| Steel grade | Mass content of elements, % | | | | | | | |
|-------------|-----------------------------|-----------|-----------|------|------|------|------|-----|
| | C | Mn | Si | S | P | Cr | Ni | Cu |
| Ст3пс | 0,14-0,22 | 0,40-0,65 | 0,05-0,15 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст5пс | 0,28-0,37 | 0,50-0,80 | 0,05-0,15 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст3Гпс | 0,14-0,22 | 0,80-1,10 | 0,05-0,15 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст5Гпс | 0,22-0,30 | 0,80-1,20 | 0,05-0,15 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| SAE1006 | max 0,08 | 0,25-0,40 | * | 0,05 | 0,04 | 0,15 | 0,15 | 0,3 |
| SAE1008 | max 0,10 | 0,30-0,50 | * | 0,05 | 0,04 | 0,15 | 0,15 | 0,3 |

* The Si content is set within :

- max 0,05%;
- max 0,10%;
- 0,10-0,20%;
- 0,15-0,35%.

By agreement with the client, it is possible to adjust the chemical composition, as well as the production of billets from other grades of steel.

Packing: "In bulk", up to 12 000 mm long (+0/-200 mm).

In agreement with the client, packing in packages is possible.

Marking: is performed by stamping in the face of the billet.



CONCAST BILLET

(under the terms of the contract)

Sizes: 150x150 / 130x130

Nominal size and the estimated weight of 1 running meter:

| Size, mm | The maximum tolerance on the side of the square, mm | The difference between the diagonals, mm | Mass per meter, kg | Corners rounding radius, max, mm | Billet curvature, max, % of length | Billet twisting, max, degrees |
|----------|---|--|--------------------|----------------------------------|------------------------------------|-------------------------------|
| 150x150 | ± 5,0 | 7,0 | 176.6 | 8,0 | 70 | 18,0 |
| 130x130 | ± 4,0 | 6,0 | 132.6 | | 70 | |

Basic chemical composition

| Steel grade | Mass content of elements, % | | | | | | | |
|-----------------------|-----------------------------|-------------|--------------|-------|-------|--------|--------|--------|
| | C | Mn | Si | S max | P max | Cr max | Ni max | Cu max |
| SAE1006 (unkilled) | max 0,08 | 0,25 - 0,45 | max 0,05 | 0,05 | 0,05 | 0,3 | 0,3 | 0,3 |
| SAE1006 (semikilled) | max 0,08 | 0,25 - 0,45 | 0,05 - 0,10 | 0,05 | 0,05 | 0,3 | 0,3 | 0,3 |
| SAE1006 (killed) | max 0,08 | 0,25 - 0,45 | 0,15 - 0,30 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| SAE1008 (unkilled) | max 0,10 | 0,30 - 0,50 | max 0,05 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| SAE1008 (semikilled) | max 0,10 | 0,30 - 0,50 | max 0,10 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| SAE 1010 (semikilled) | 0,08 - 0,13 | 0,30 - 0,60 | 0,05 - 0,010 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| SAE 1010 (killed) | 0,08 - 0,13 | 0,30 - 0,60 | 0,10 - 0,20 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| SAE 1018 | 0,15 - 0,20 | 0,60 - 0,90 | max 0,10 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст 3пс | 0,14 - 0,22 | 0,40 - 0,65 | 0,05 - 0,15 | 0,05 | 0,045 | 0,3 | 0,3 | 0,3 |
| Ст 3сп | 0,14 - 0,22 | 0,40 - 0,65 | 0,15 - 0,30 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст 3Гпс | 0,17 - 0,22 | 0,80 - 1,10 | 0,05 - 0,15 | 0,04 | 0,04 | 0,3 | 0,3 | 0,35 |
| Ст 3Гсп | 0,18 - 0,24 | 0,60 - 0,90 | 0,15 - 0,30 | 0,04 | 0,04 | 0,3 | 0,2 | 0,2 |
| Ст 5пс | 0,28 - 0,37 | 0,50 - 0,80 | 0,05 - 0,15 | 0,05 | 0,04 | 0,3 | 0,3 | 0,3 |
| Ст 5сп | 0,28 - 0,37 | 0,50 - 0,80 | 0,15 - 0,35 | 0,03 | 0,03 | 0,3 | 0,3 | 0,3 |

Packing: "In bulk", up to 12 000 mm long (+0/-200 mm).
In agreement with the client, packing in packages is possible.

Marking: is performed by stamping in the face of the billet.



Pig iron



Pig iron (under the terms of the contract)

Profile - pyramidal in the size of 210x210x100 mm with a maximum weight of 18 kg

Basic chemical composition:

| Pig iron grade | Mass content of elements, % | | | | |
|----------------|-----------------------------|--------|---------|-------|-------|
| | C | Mn max | Si | S max | P max |
| ПЛ1/ПЛ2 | 4,0-5,0 | 1,5 | 0,5-1,2 | 0,050 | 0,15 |