

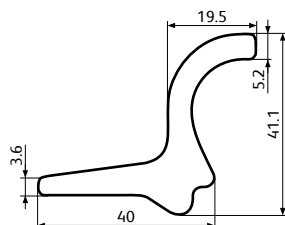
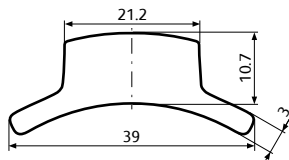
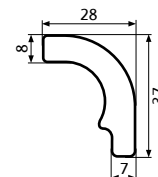
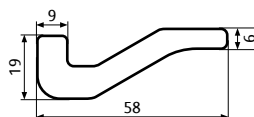
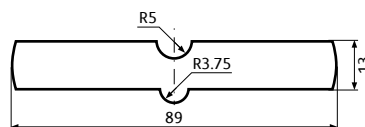
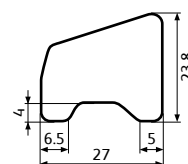
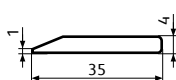
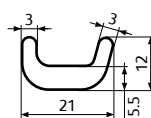
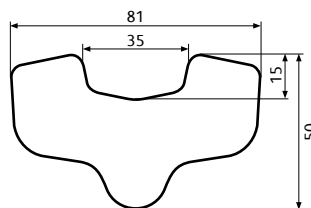
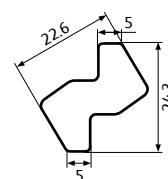
# STEEL SHAPED PROFILES



STEEL SHAPED PROFILES

## HOT-ROLLED SHAPED PROFILES

TU 14-1-5144-92

Shaped Profile  
No. 1577Shaped Profile  
No. 1892Shaped Profile  
No. 2037Shaped Profile  
No. 2080Shaped Profile  
No. 2215Shaped Profile  
No. 2170Shaped Profile  
No. 2472Shaped Profile  
No. 2461Shaped Profile  
No. 2589Shaped Profile  
No. 2118

## DESCRIPTION

Hot-rolled profiles are produced for manufacture of billets designated for products or component parts requiring additional mechanical finishing.

## TECHNICAL REQUIREMENTS

Bar twisting around the long axis is not more than  $3^\circ$  per 1 m length.

Bar straightness - not more than 3 mm per 1 m length.

Profiles are produced in bars of random lengths from 2.0 to 7.0 m, specific cut length or length multiple of specific cut length from 1.5 to 7.0 m.

Delivery is made in packs up to 5000 kg.

Profiles are produced from steel grades according to EN 10025, steel grade S235J2; GOST 1050-88; GOST 4543-71.

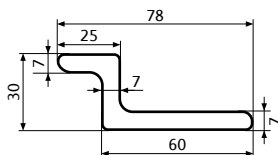
Profiles can be produced from different steel grades in accordance with customers' request.

Steel shaped profiles of any configuration according to customer's drawings can be produced.

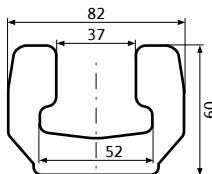
# HOT-EXTRUDED SHAPED PROFILES

TU 14-1-3602-2009

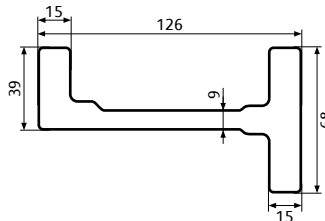
**Shaped Profile  
No. 510**



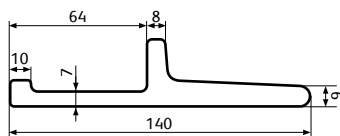
**Shaped Profile  
No. 633**



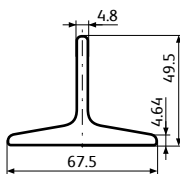
**Shaped Profile  
No. 1252**



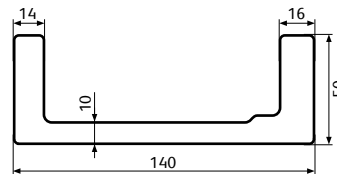
**Shaped Profile  
No. 2496**



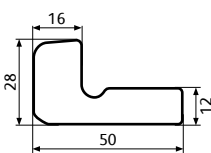
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No. 2494**



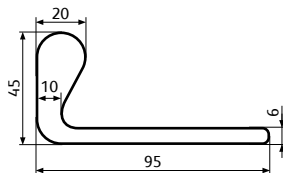
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No. 1253**



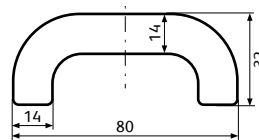
**Shaped Profile  
No. 2374**



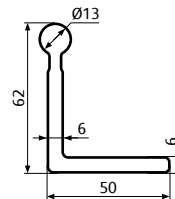
**Shaped Profile  
No. 700**



**Shaped Profile  
No. 2503**



**Shaped Profile  
No. 1810**



## DESCRIPTION

Profiles are produced by hot extrusion.

Cross section form is a closed loop, formed by chain of straight and curved lines.

## TECHNICAL REQUIREMENTS

Bar twisting around the long axis does not exceed 2° per 1 m length.

Bar straightness is not more than 2 mm per 1 m length.

Total straightness does not exceed the product of permissible bar straightness per one meter and bar length measured in meters.

Convexity and concavity in cross section are not more than 1% of overall profile width.

Profiles are produced from steel grades according to EN10025, steel grade S355J2, S355JO, S235JR, S355J2; GOST 1050-88, GOST 4543-71.

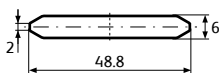
Profiles can be produced from different steel grades in accordance with customers' demand

Steel shaped profiles of any configuration according customer's drawings can be produced.

# HIGH PRECISION COLD-FORMED SHAPED PROFILES

TU 14-11-245-88

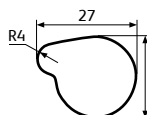
**Shaped Profile  
No. 2588**



**Shaped Profile  
No. 2205**



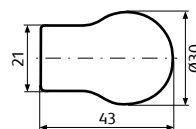
**Shaped Profile  
No. 2442**



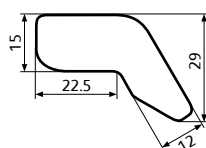
**Shaped Profile  
No. 2471**



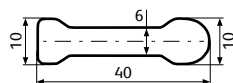
**Shaped Profile  
No. 2476**



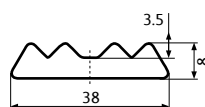
**Shaped Profile  
No. 2488**



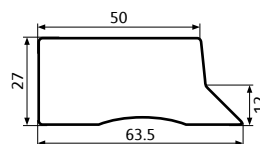
**Shaped Profile  
No. 2491**



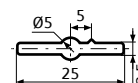
**Shaped Profile  
No. 2513**



**Shaped Profile  
No. 2609**



**Shaped Profile  
No. 2382**



## DESCRIPTION

Cold-deformed profiles with a solid cross section are intended for manufacture of component parts without or with insignificant additional finishing.

Tolerance frames of dimensions and profile elements comply with the quality grade H11.

Accuracy of the particular profile manufacturing is determined by the lowest tolerance of quality grade of any cross-section element.

The profiles are produced in bars of specific cut length and multiple specific cut length from 1 m up to 7 m.

Profiles with cross section up to 200 mm<sup>2</sup> can be shipped in rings.

Profiles are produced from steel grades according to EN10025, steel grade S235J2, GOST 1050-88, GOST 4543-71.

Profiles can be produced from different steel grades in accordance with customers' demand

Steel shaped profiles of any configuration according customer's drawings can be produced.

## DIMENSIONS OF HIGH ACCURACY COLD-DEFORMED PROFILES

Bar width, mm	Bar thickness, mm														
	18-22	23	24	25	26	27-30	31	32	35	36-40	41	43	44	45-50	55
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-25	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
27-29	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
30	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-
31-34	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-
35-39	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
40-49	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-
50-55	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-
57-62	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-
63-64	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-
65-78	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
79-85	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
86-90	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
95-100	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
105-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115-120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
124-127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

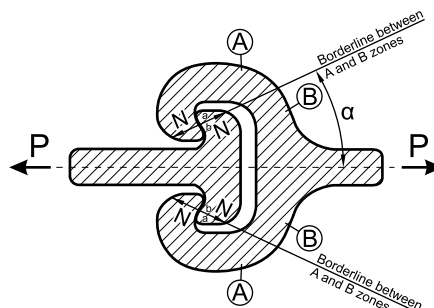
Our company has developed and patented a special system of profiles to make a sheet piling interlock. Such profiles' system can be applied as an interlock in welded, pipe and other sheet piling panels in the process of construction of hydraulic engineering, transport and industrial-civil projects. The interlock has passed the tests in Research and Development Center "Bridges" (Moscow) and in the certified testing center of JSC Severstal-metiz.

Test results of profiles, steel grade 09Г2С with chemical composition according to GOST 19281-89 (minimum tensile grade 325), have been carried out in the certified laboratory of "Severstal-metiz" and show that:

- Actual breaking force of an interlock on running centimeter basis is:  
 $P1_{\text{specific breaking force}}$  from 38.5 kN/running centimeter up to 46.0 kN/running centimeter.
- Actual maximum normal stresses in flat parts of profiles in case of interlock break are:  
 $\sigma1_{\text{max flat part}}$  from 326 N/mm<sup>2</sup> (MPa) up to 389 N/mm<sup>2</sup> (MPa).

Application of this interlock in sheet piling constructions is recommended by the following technological normative documents:

- GOST R 536-29-2009  
Sheet piles of steel cold-formed sections
- TU 5264-001-07851735-2009  
Welded sheet piling profiles
- TU 5264-015-01393674-2012  
Welded sheet piles of half-round section
- TU 5264-016-01393674-2012  
Welded pipe sheet piles



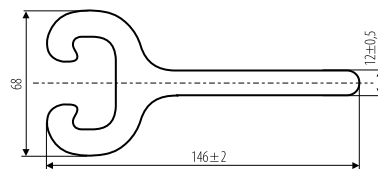
# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

## SHAPED PROFILES No. 2400, No. 2401

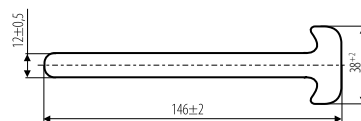
### Shaped Profile No. 2401

Area of section	$F=2883 \text{ mm}^2$
Specific weight	22.6 kg/running meter
Bars length	$4400^{+100} (3500^{+100} \dots 4400^{+100} \text{ mm})$



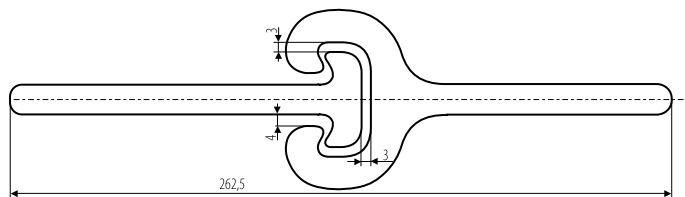
### Shaped Profile No. 2400

Area of section	$F=2059 \text{ mm}^2$
Specific weight	16.2 kg/running meter
Bars length	$4400^{+100} (4000^{+100} \dots 6200^{+100} \text{ mm})$



### Interlock

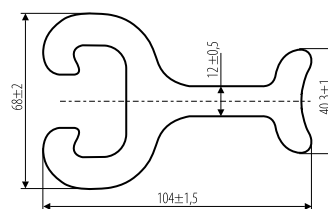
Utilized shaped profiles	No. 2400 and No. 2401
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## SHAPED PROFILES No. 2415, No. 2416

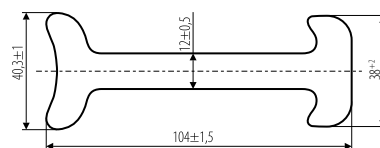
### Shaped Profile No. 2415

Area of section	$F=2651 \text{ mm}^2$
Specific weight	20.8 kg/running meter
Bars length	$4000^{+50} (3500^{+50} \dots 4700^{+50} \text{ mm})$



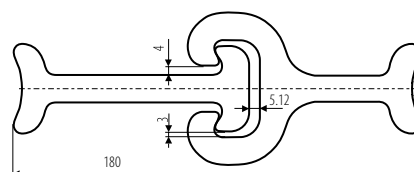
### Shaped Profile No. 2416

Area of section	$F=1827 \text{ mm}^2$
Specific weight	14.3 kg/running meter
Bars length	$6000^{+50} (4500^{+50} \dots 7000^{+50} \text{ mm})$



### Interlock

Utilized shaped profiles	No. 2415 and No. 2416
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# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

## SHAPED PROFILES No. 2417, No. 2418

### Shaped Profile No. 2417

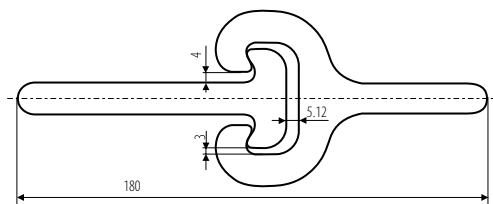
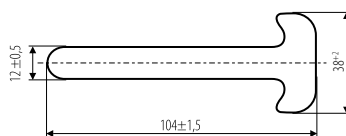
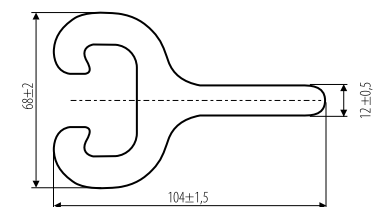
Area of section	$F=2379 \text{ mm}^2$
Specific weight	18.7 kg/running meter
Bars length	$4000^{+50} \dots 5400^{+50} \text{ mm}$

### Shaped Profile No. 2418

Area of section	$F=1555 \text{ mm}^2$
Specific weight	12.2 kg/running meter
Bars length	$5200^{+50} \dots 7500^{+50} \text{ mm}$

### Interlock

Utilized shaped profiles	No. 2417 and No. 2418
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## SHAPED PROFILES No. 2420, No. 2421

### Shaped Profile No. 2420

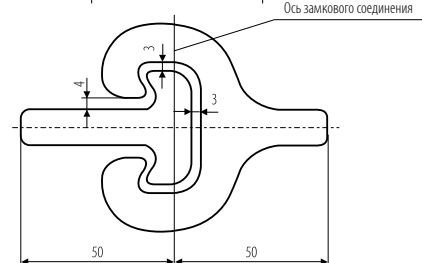
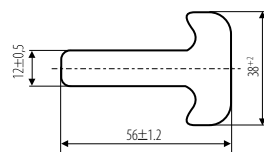
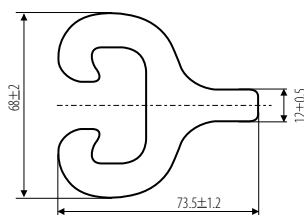
Area of section	$F=2027 \text{ mm}^2$
Specific weight	15.9 kg/running meter
Bars length	$6000^{+100} (4500^{+100} \dots 6400^{+100} \text{ mm})$

### Shaped Profile No. 2421

Area of section	$F=990 \text{ mm}^2$
Specific weight	7.77 kg/running meter
Bars length	$7000^{+100} (7000^{+100} \dots 7500^{+100} \text{ mm})$

### Interlock

Utilized shaped profiles	No. 2420 and No. 2421
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# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

## SHAPED PROFILES No. 2422, No. 2423

### Shaped Profile No. 2422

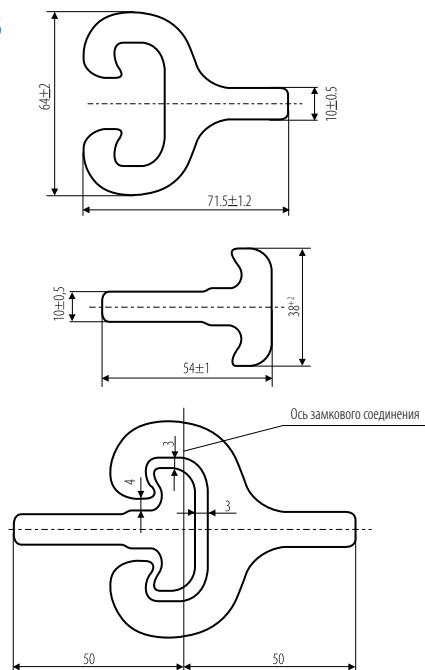
Area of section	$F=1646 \text{ mm}^2$
Specific weight	12.9 kg/running meter
Bars length	$4500^{+100} \dots 6000^{+100} \text{ mm}$

### Shaped Profile No. 2423

Area of section	$F=851 \text{ mm}^2$
Specific weight	6.68 kg/running meter
Bars length	$5000^{+100} \dots 6200^{+100} \text{ mm}$

### Interlock

Utilized shaped profiles	No. 2422 and No. 2423
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## SHAPED PROFILES No. 2424, No. 2425

### Shaped Profile No. 2424

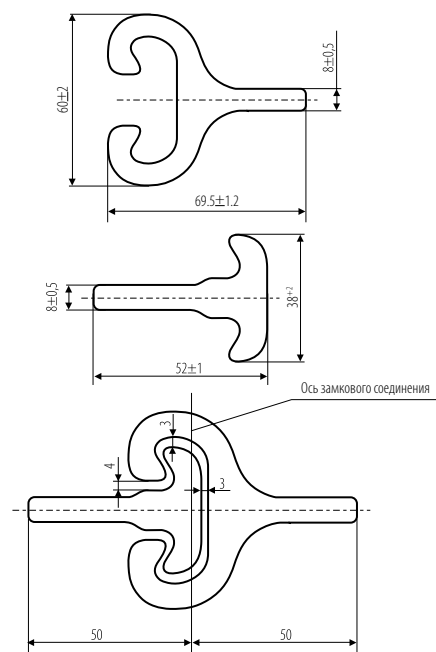
Area of section	$F=1295 \text{ mm}^2$
Specific weight	10.2 kg/running meter
Bars length	$5000^{+100} \dots 7000^{+100} \text{ mm}$

### Shaped Profile No. 2425

Area of section	$F=709 \text{ mm}^2$
Specific weight	5.57 kg/running meter
Bars length	$5800^{+100} \dots 7500^{+100} \text{ mm}$

### Interlock

Utilized shaped profiles	No. 2424 and No. 2425
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# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

## SHAPED PROFILES No. 2443, No. 2444

### Shaped Profile No. 2443

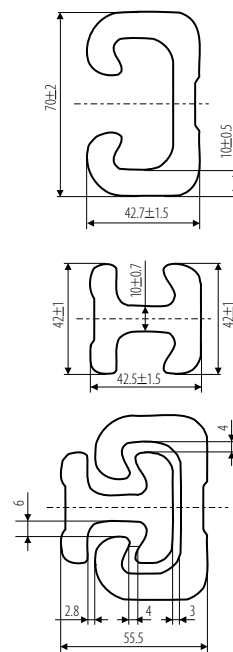
Area of section	$F=1539 \text{ mm}^2$
Specific weight	12.1 kg/running meter
Bars length	$6500^{+50}$ ( $4400^{+50} \dots 6500^{+50}$ mm)

### Shaped Profile No. 2444

Area of section	$F=1080 \text{ mm}^2$
Specific weight	8.48 kg/running meter
Bars length	$6500^{+50}$ ( $5900^{+50} \dots 7500^{+50}$ mm)

### Interlock

Utilized shaped profiles	No. 2443 and No. 2444
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## SHAPED PROFILES No. 2450, No. 2451

### Shaped Profile No. 2450

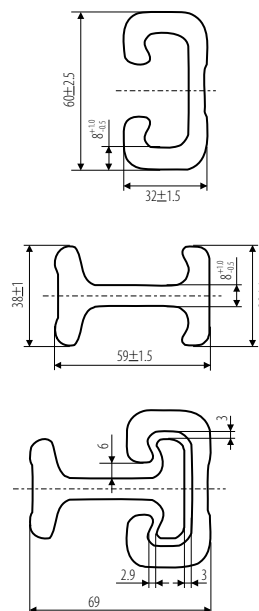
Area of section	$F=959 \text{ mm}^2$
Specific weight	7.53 kg/running meter
Bars length	$5000^{+50}$ ( $4000^{+50} \dots 5400^{+50}$ mm)

### Shaped Profile No. 2451

Area of section	$F=1019 \text{ mm}^2$
Specific weight	8.00 kg/running meter
Bars length	$5000^{+50}$ ( $3800^{+50} \dots 5100^{+50}$ mm)

### Interlock

Utilized shaped profiles	No. 2450 and No. 2451
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# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

## SHAPED PROFILES No. 2453, No. 2454

### Shaped Profile No. 2453

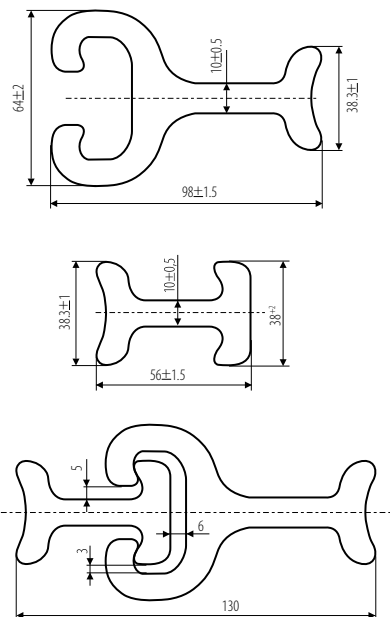
Area of section	$F=2184 \text{ mm}^2$
Specific weight	17.1 kg/running meter
Bars length	$4000^{+50} \dots 5900^{+50} \text{ mm}$

### Shaped Profile No. 2454

Area of section	$F=1115 \text{ mm}^2$
Specific weight	8.75 kg/running meter
Bars length	$5700^{+50} \dots 7500^{+50} \text{ mm}$

### Interlock

Utilized shaped profiles	No. 2453 and No. 2454
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## SHAPED PROFILES No. 2467, No. 2468

### Shaped Profile No. 2467

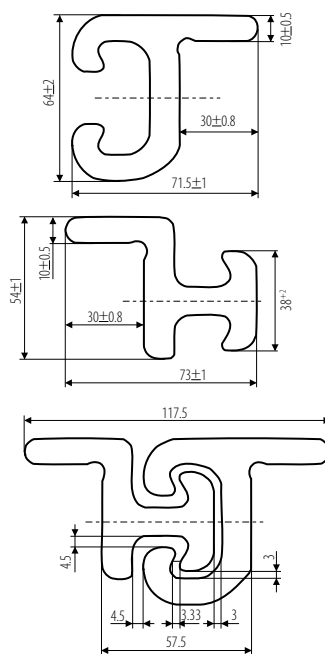
Area of section	$F=1736 \text{ mm}^2$
Specific weight	13.6 kg/running meter
Bars length	$4700^{+50} \dots 7500^{+50} \text{ mm}$

### Shaped Profile No. 2468

Area of section	$F=1538 \text{ mm}^2$
Specific weight	12.1 kg/running meter
Bars length	$5300^{+50} \dots 7500^{+50} \text{ mm}$

### Interlock

Utilized shaped profiles	No. 2467 and No. 2468
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# STEEL SHAPED PROFILES FOR SHEET PILING INTERLOCK

TU 14-1-3602-2009

## SHAPED PROFILES No. 2469, No. 2470

### Shaped Profile No. 2469

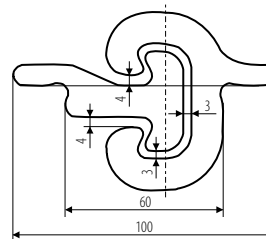
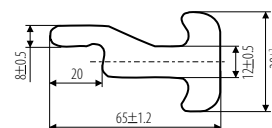
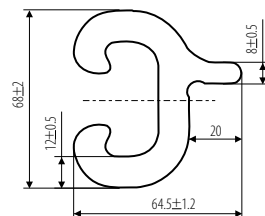
Area of section	$F=1773 \text{ mm}^2$
Specific weight	13.9 kg/running meter
Bars length	$4500^{+50} \dots 7300^{+50} \text{ mm}$

### Shaped Profile No. 2470

Area of section	$F=1090 \text{ mm}^2$
Specific weight	8.56 kg/running meter
Bars length	$5900^{+50} \dots 7500^{+50} \text{ mm}$

### Interlock

Utilized shaped profiles	No. 2469 and No. 2470
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# HIGH PRECISION FLAT STEEL PROFILES IN COILS WITH PRECISION LAYING

EN10139, GOST 503-81, GOST 10234-77

## PRODUCT

- Steel strips and flat steel profiles of different configurations in coils with precision laying.
- Square section steel profiles from 5x5 to 8x8 in coils with precision laying.

**The following non-alloy structural steel grades are used for flat steel manufacturing:**

- steel grades according to international standards such as DC01 in accordance with EN10139, C4C, C10C in accordance with EN10263;
- steel grades according to with Russian requirements documents such as GOST 1050, GOST 10702, TU 14-1-5545;
- other steel grades by agreement with a customer.

## FINISHED PRODUCT CHARACTERISTICS

- Thickness - 1-10 mm
- Width - 3-20 mm
- Thickness tolerance for geometrical dimensions is up to 0.05 mm,
- Tensile strength of finished product is not more than 1250 N/mm<sup>2</sup>
- The surface is smooth, clean. Surface undulation is  $Ra \leq 0.5 \mu m$  according to EN 10139

## APPLICATION

Profiles are used as semi-finished product in the manufacture of:

- window and furniture fittings
- auto parts (car components)
- elements of mechanisms in machine-building
- metal grill flooring, industrial floors
- shop fittings
- consumer goods

## PACKAGING

The product is supplied in coils with precision laying.

**Parameters of the coil:**

- outer  $\varnothing$  - up to 1200 mm
- inner  $\varnothing$  - 400-450 mm
- width - 250-400 mm
- tolerance specified for straightness of sides - up to 1.5 mm for 1000 mm

