

UDC 699.14-423.3

July 1978

Steel Sections  
**Bright Square Edge Equal Angles**  
 Dimensions, Permissible Deviations, Weights

**DIN**  
**59 370**

Blanker gleichschenkliger scharfkantiger Winkelstahl; Masse, zulässige Abweichungen, Gewichte

Dimensions in mm

### 1 Scope

This Standard applies to bright square edge angles with equal legs, in the dimension range specified in Table 1 and made from the steel grades quoted in Section 5.

### 2 Definition

Bright steel is distinguished from hot formed steel by the fact that it has received a relatively smooth, clean surface and substantially larger grade accuracy as a result of de-scaling and non-cutting cold forming. Because angle steel is difficult to draw, for reasons determined by the manufacturing process, it is not possible to obtain a completely bright surface.

### 3 Designation

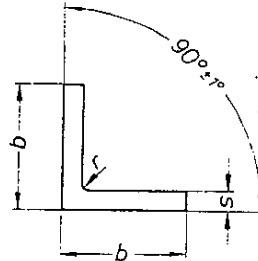


Figure 1.

Designation of a bright equal angle, sharp-edged (S), of leg width  $b = 12$  mm, leg thickness  $s = 2$  mm, made from a steel with code number St 37-2 K according to DIN 1652:

Angle DIN 59 370 — St 37-2 K — S 12 x 2

Instead of the denomination "angle" the abbreviation "L" according to DIN 1353 Part 2 may be used.

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**4 Dimensions and permissible deviations on dimension and form**

**4.1 Cross-section and permissible deviations**

4.1.1 Angles according to this Standard are supplied with the dimensions and permissible deviations according to Table 1.

Table 1. Dimensions, permissible deviations, cross-section and weight

Symbol S	b	s		r max.	Cross-section 1) mm <sup>2</sup>	Weight 2) kg/m			
		Perm. dev.	Perm. dev.						
10 X 2	10	± 0,10	2	0,5	36	0,28			
12 X 2 3	12		2		± 0,10	44	0,35		
			3			63	0,49		
15 X 2 3 4	15	± 0,15	2	0,8		56	0,44		
			3		81	0,64			
			4		104	0,82			
20 X 2 3 4	20	± 0,20	2	± 0,15	76	0,60			
			3		111	0,87			
			4		144	1,13			
25 X 3 4 5	25		3		1,0	141	1,11		
			4			184	1,44		
			5			225	1,77		
30 X 3 4 5	30		3			1,0	171	1,34	
			4				224	1,76	
			5				275	2,16	
35 X 3 4 5	35		3				1,0	201	1,58
			4					264	2,07
			5					325	2,55
40 X 3 4 5	40	3	1,0	231				1,81	
		4		304				2,39	
		5		375				2,94	
45 X 5	45	5		425	3,34				
50 X 5 6	50	5		475	3,73				
		6		564	4,43				
60 X 6	60	6		684	5,37				

1) Cross-section =  $2 b \cdot s - s^2$   
 2) Calculated using a density of 7.85 kg/dm<sup>3</sup>

4.1.2 The permissible deviation  $\alpha$  from rectangularity is  $\pm 1^\circ$ . This gives the maximum values for the dimensions  $t$  as a function of leg width  $b$  quoted in Table 2.

Table 2. Maximum values for  $t$

b	10	12	15	20	25	30	35	40	45	50	60
t	± 0,18	± 0,20	± 0,26	± 0,34	± 0,44	± 0,52	± 0,62	± 0,70	± 0,78	± 0,88	± 1,04

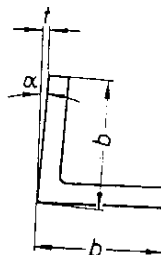


Figure 2.

#### 4.2 Straightness

Angles according to this Standard are normally supplied having been straightened by visual alignment. Special requirements must be agreed.

#### 5 Materials

Angles according to this Standard should preferably be manufactured from the steel St 37-2 K (see DIN 1652). Other steel grades can be supplied subject to previous agreement. The required steel grade should be specified in the designation.

#### 6 Mode of delivery

6.1 Angles according to this Standard are normally supplied in manufacturing lengths of 3000 to 8000 mm. Special lengths and length deviations should be agreed.

#### 6.2 Example of order

1000 kg of bright square edge equal angles with leg width  $b = 12$  mm and leg thickness  $s = 2$  mm, made from St 37-2 K according to DIN 1652 in manufacturing lengths:

1000 kg Angle DIN 59 370 – St 37-2 K – S 12 X 2  
or 1000 kg L DIN 59 370 – St 37-2 K – S 12 X 2

2000 kg of bright square edge equal angles with leg width  $b = 20$  mm and leg thickness  $s = 3$  mm, made from St 37-2 K according to DIN 1652 in fixed lengths of 2000 mm with a permissible length deviation of  $\pm 2$  mm:

2000 kg Angle DIN 59 370 – St 37-2 K – S 20 X 3 in fixed length 2000  $\pm 2$   
or 2000 kg L DIN 59 370 – St 37-2 K – S 20 X 3 in fixed length 2000  $\pm 2$

#### 7 Testing

The number of angles which shall be tested for accuracy to size by measurements at the manufacturer's works prior to despatch should be agreed.

#### Further standards

- DIN 1022 Steel bars; hot rolled equal angle square-edge steel (LS steel); dimensions, weights, permissible variations  
DIN 1028 Steel bars; hot rolled, round edge equal angles; dimensions, weights, permissible variations, static values  
DIN 1029 Steel bars; hot rolled round edge unequal angles; dimensions, weights, permissible variations, static values

#### Explanations

Following completion of the work on the successor issue of the dimension standard for hot rolled equal angles (DIN 1028) the provisions for bright equal angles have also been revised. The main emphasis again here was on the effort to reduce the number of standardized angles and hence achieve a rationalization and simplification of manufacture, storage and usage.

In accordance with this aim, the following eight dimensions from the earlier May 1961 issue of DIN 59 370 have been deleted and are no longer included in the new version: 10 X 1 – 10 X 3 – 12 X 4 – 18 X 2 – 18 X 3 – 18 X 4 – 35 X 6 – 60 X 5.

The angle S 40 X 3 has been newly adopted. In addition, for some angles there has been a slight increase in the permissible deviations from leg width and leg thickness.

The remaining contents of the standard are materially unchanged.