DEWMARK
CONCRETE

SG 61

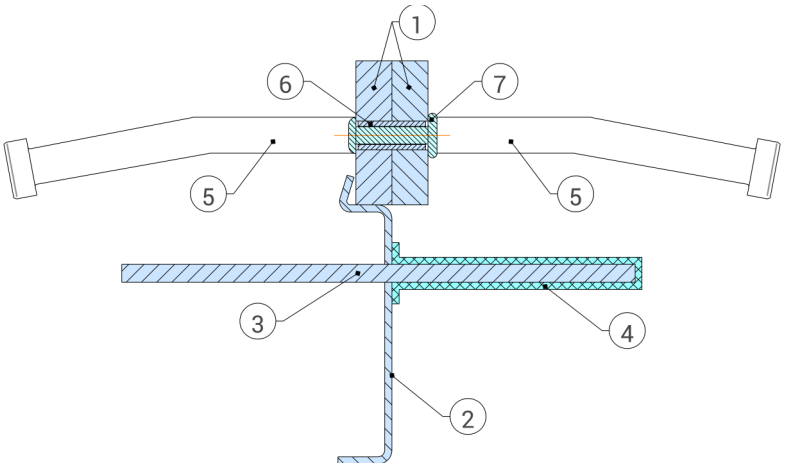
Description

The classic armour joint profile for construcition joints for floors with high loads.

With top strips 10 mm thick and different types of backing plates depending on the nature and intensity of the load.

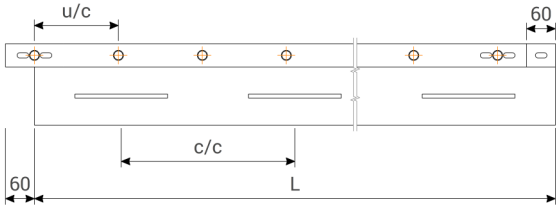
Benefits

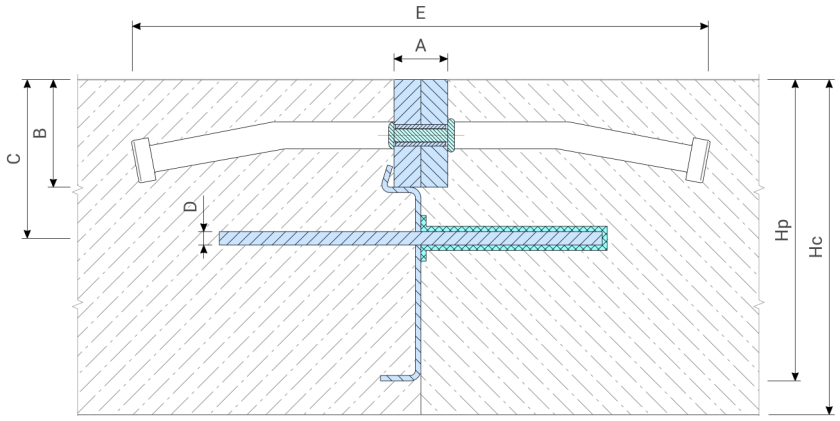
- Protection of the edges of the joint from chipping under loads.
- The unique system of alignment of the upper strips by means of spacers allows to achieve differences between them not exceeding 0.1 mm.
- Use of special anchor fasteners - flexible Nelson stops. Anchor stops, welded using arc welding technology, securely fix the profile in concrete along the entire length.
- Prevents vertical movement of adjacent concrete slabs due to the use of base plates that effectively transfer the load between them, ensuring a level floor surface.
- Allows you to control the horizontal movement of the concrete slab and prevent accidental cracks.
- Allows to achieve divergence of adjacent slabs at a distance of up to 25 mm.



Accessories	
1	Steel strips 10x40
2	Steel rail 2 mm: - straight for a profile height of 90-130 mm - omega for heights from 150 mm and above
3	Dowel 160x160 мм: - 60/OP-5 - 5 mm, steel S355 (σ_T=355 MPa) - 60/OP-8 - 8 mm, steel S355 (σ_T=355 MPa) - 60/OP-8XL - 8 mm, steel S700 (σ_T=850 MPa)
4	Plastic quick-release cover
5	Anchor stops 10x100
6	Dowel pin
7	Rivet fasteners

Dimensions

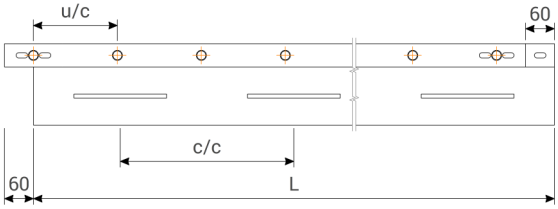


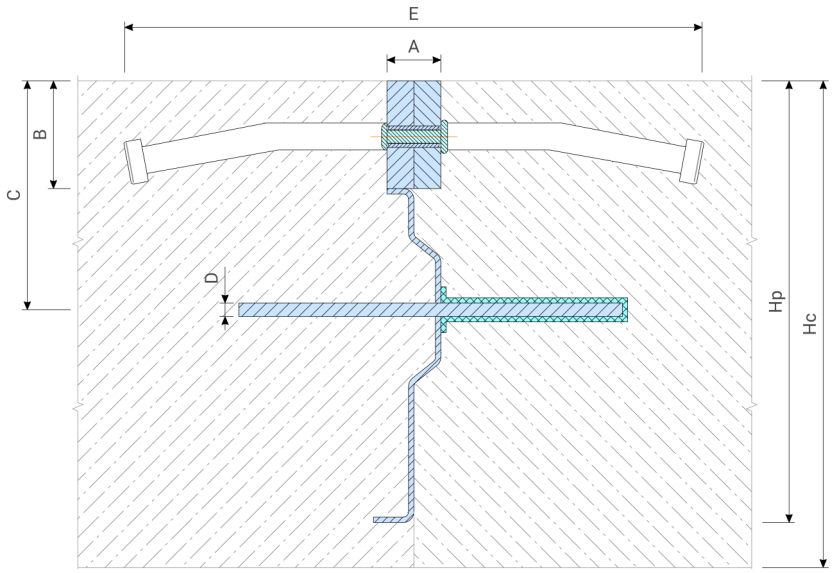


Profile	Hp (mm)	Hc (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	u/c[2] (mm)	c/c[3] (mm)	L (mm)
SG 61-20/90-5 (8; 8XL)	90	100-120	20	40	60	5 | 8[1]	220	250	600	3000
SG 61-20/110-5 (8; 8XL)	110	125-140	20	40	60	5 | 8[1]	220	250	600	3000
SG 61-20/130-5 (8; 8XL)	130	145-160	20	40	70	5 | 8[1]	220	250	600	3000

[1] Data are indicated for all types of dowel that can be used. Select the dowel based on the specified loads (see Calculation of base plates for bearing loads)
[2] u/c — maximum distance between anchor stops.
[3] c/c — distance between dowels.

! For a height of 150 mm and more, the profile is made with an Omega guide to increase the rigidity of the structure and exclude possible profile deflections during concrete pouring.





Profile	Hp (mm)	Hc (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	u/c[2] (mm)	c/c[3] (mm)	L (mm)
SG 61-20/150-5 (8; 8XL)	150	165-180	16	40	80	220	5 | 8[1]	250	600	3000
SG 61-20/180-5 (8; 8XL)	180	185-210	16	40	90	220	5 | 8[1]	250	600	3000
SG 61-20/210-5 (8; 8XL)	210	215-240	16	40	100	220	5 | 8[1]	250	600	3000
SG 61-20/240-5 (8; 8XL)	240	245-270	16	40	120	220	5 | 8[1]	250	600	3000
SG 61-20/270-5 (8; 8XL)	270	275-300	16	40	140	220	5 | 8[1]	250	600	3000

[1] Data are indicated for all types of dowel that can be used. Select the dowel based on the specified loads (see Calculation of base plates for bearing loads)
[2] u/c — maximum distance between anchor stops.
[3] c/c — distance between dowels.

Materials and method of production of components

Accessories	Material	Method of production	On request
Upper steel strip	S235	Laser cutting Steel straightening	HDG or AISI 304 (1.4301)
Steel guide	S235	Laser cutting, bending	
Dowel	S355	Laser cutting	HDG or AISI 304 (1.4301)
Casing	ABS	Injection molding	
Anchor stops	S235	Cold heading	HDG or AISI 304 (1.4301)

Manufacturing Tolerances

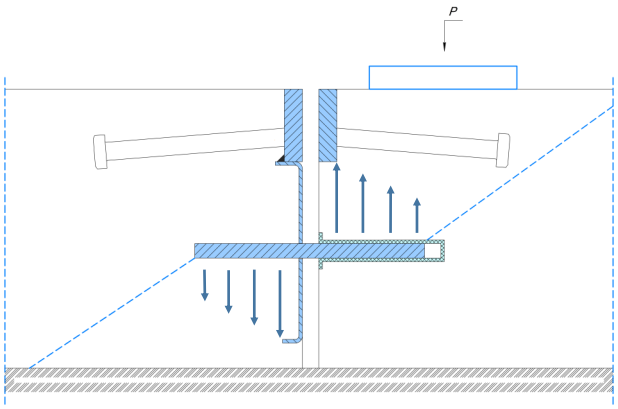
Characteristic	Value
Straightness	±3 mm/m
Curvature of the upper bound	±1 mm/m
Upper strip curl	1^0/m
Roughness of the upper face, no more	Rz20
Length	±0,5 mm
Height	±1 mm

On request

- Making a profile with top strips 6 or 8 mm thick.
- Manufacturing of a profile or its components from corrosion-resistant stainless steel AISI 304.
- Calculation of support plates for loads, changing their number and distance between them.

Permissible loads

The load transfer between adjacent slabs is carried out by the Dowel. The maximum load that a plate can withstand is calculated according to the methodological guide of the British concrete community TR 34 version 4 and depends on the thickness of the metal, the dimensions of the dowel, the strength of its material, the size of the structural joint, the concrete grade and the thickness of the concrete.
(For more information on load calculations based on the size of the dowel and concrete, please refer to the section “Calculation of base plates for bearing loads” or visit the Dewmark Concrete Information Center website).



Permissible loads when opening the joint by 15 mm for concrete C20 / 25

Type of dowel	Material	Thick, mm	Dimensoins, mm	Axle load (loader type according to DIN 1055-3)	Carrying capacity loader according to DIN 1055-3
60/OP-5	09Г2С	5	160x160	63 kN (G3)[1]	25 kN
60/OP-8	09Г2С	8	160x160	140 kN (G5)[1]	60 kN
60/OP-8XL	35ХГСА	8	160x160	170 kN (G6)[1]	80 kN

[1] The specified maximum load capacity for reinforced concrete. Punching concrete possible at low slab thicknesses — ask for more information.

For other values

See calculator for dowel type selection

- Profile SG 61-20/5 - recommended for installation in floors with medium to high loads.
- Profile SG 61-20/8 - suitable for installation in all types of floors.
- Profile SG 61-20/8XL - designed for installation in floors with extremely high loads.

Distinctive features

Anchor stops

The Dewmark Concrete SG 61 profile is characterized by high shock loads when wheeled vehicles pass through the expansion joint formed during shrinkage. Due to such loads, reliable anchoring of the upper strip in the concrete body is required.

In order to avoid cracking of the slab under shock loads, the welded elements used in the production of profiles must withstand tensile and bending loads. Anchor stops used in Dewmark profiles have limited flexural flexibility, which prevents cracking of the slab concrete during construction. It is because of this property that the anchor stops are called "flexible". The minimum deflection in standard shear tests is specified in Eurocode 4.

Anchor stops are made of mild steel by cold forming (cold heading).

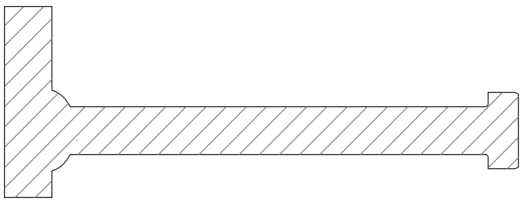
Anchor stop welding technology.

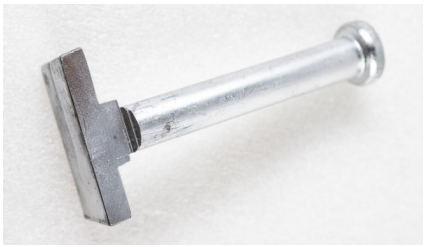
For fastening the anchor stops, the technology of contact-arc welding is used, better known as Stud Welding Drawn Arc - elongated arc welding. This technology allows you to weld various combinations of materials, creating high-quality structures for a wide variety of construction industries.

Welding process

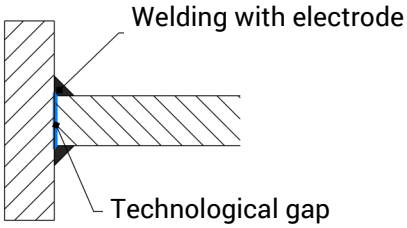
When using Stud Welding Drawn Arc technology, the arc, with a high current, melts the end of the anchor stop and the welded surface in a short time (from 0.5-1 s for stops with a diameter of 10 mm). At the same time, the current strength reaches 2500 A. At the end of welding, the stop is immersed in the weld pool. The result is a joint over the entire surface with characteristics exceeding the strength of the materials of the stop and the surface to be welded. This technology, in terms of the quality and degree of welding, is several times superior to welding with a conventional electrode: with this technology, the anchor stop (Nelson's flexible stop) is welded into a single whole with the profile body (see fig. And photo) and the welding place cannot be destroyed by any loads and tens of times superior to the use of various staples made of wire or reinforcement as anchor elements. Own production including all cycles: metal cutting, welding, cold heading of anchor stops allows you to control product quality at all stages.

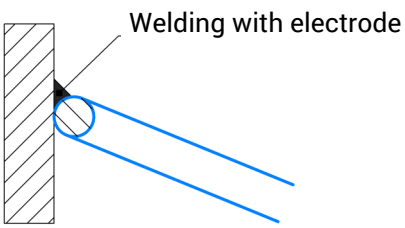
Flexible anchor stops provide a firm hold in the concrete slab, preventing the strips from rotating or shifting as vehicles pass through the expansion joint.





Negative sides in the use of other welded anchor elements.





Electrode welding of the anchor stop:
After electrode welding, a space remains between the anchor element and the strip. If the weld seam breaks down due to corrosion and / or stress, the anchor stop will not perform its function.

Welding of wire or reinforcement anchor staples:
The use of this type of anchorage is the most unreliable solution, since welding is carried out only on one side of the element and, under prolonged loads, can lead to the destruction of the weld even without corrosion.