



Units 1-3 Shannon Industrial Estate
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Data Sheet

Zig Zag Plastic Chair

Versatile spacer with a high load-bearing capacity. Due to its unique design it does not overturn easily or break when stood on. Excellent concrete flow characteristics.

Manufactured in accordance with BS7973-1 :2001.

Product Code	Cover (mm)	Pack Size (mtr)	Pallet Size (mtr)
PCHZ15	15	100	5000
PCHZ20	20	100	5000
PCHZ25	25	100	5000
PCHZ30	30	100	5000
PCHZ35	35	80	3200
PCHZ40	40	80	3200
PCHZ45	45	80	3200
PCHZ50	50	80	3840
PCHZ55	55	82	3280
PCHZ60	60	82	3280
PCHZ65	65	82	3280



All sizes are 2 metre lengths. Other lengths available on request.

Stability/Storage: Long term intensive influence of light (UV Radiation) can damage products of polypropylene. During storage, the items should be protected against sun exposure and bright daylight.



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Intended application

Thickness and tightness of the concrete cover are crucial for the durability of structures made of reinforced concrete.

The ZZ strip is a spacer for reinforcements of reinforced concrete components. When used correctly, the ZZ strips ensure a safe distance between the reinforcements and formwork and safeguard the specified concrete cover.

Bond between spacer and concrete

The concrete can surround the strip exceedingly well thanks to the geometry of the ZZ strip. Additional openings and recesses guarantee the bonding of the spacer and concrete.

Formation of cracks on the concrete surface

Owing to the zigzag shape of the spacer, the feet are offset and not in a line. This minimises the formation of cracks in the concrete cover.

Material

The material used for the ZZ strip is a rot – resistant, difficulty inflammable hard PCV.

Fire protection

According to DIN 4102 part 4, appendix B, section 3.1, the spacer made of plastic does not reduce the fire resistance duration of the components.

Positional stability

The offset triangular shape of the ZZ strip cross section guarantees the positional stability during the laying of the reinforcement, the closing of the formwork and concreting.

Load – bearing capacity

When properly laid, the load – bearing capacity complies with the requirements in – situ – concrete and finished components. Continuous monitoring at the manufacturer's ensures constant quality.



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Material of the test object:	PVC
Colour of the test object:	Grey
Concrete cover of the test object:	30 mm
Test temperatures:	20°C, 40°C, 0°C

The test was conducted at the university of Köthen, a college of applied sciences, in 06366 Köthen, Bernburger Str. 55.

The following was tested:

1. The maximum load – bearing capacity (path limited to 5 mm) as a function of the three test temperatures.
2. The recovery capacity of the test object
3. The load – bearing capacity at max. 3 mm deformation.

Specification:

1 kN load – bearing capacity at max. 3 mm deformation at all the above temperatures.

Test set – up and performance

3 ZZ strips, 30 cm long, were tested in each case. They were raised to the necessary test temperatures according to the specifications. The force was transmitted to the test objects by using a tie bar to which 3 iron bars with a diameter of 15 mm were welded. The distance between the iron bars was 10 cm. An Instron universal testing machine was used. As a result, a medium reinforcement was achieved as the load.

After loading, the load was removed and the recovery capacity was determined with a vernier calliper. When the load was removed, the tie bar still remained on the test object.



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Results

Recovery capacity

After removal of the load, the aim was to determine that recovery took place quickly. About 2/3 of the maximum deformation had receded within 35 sec. After 2 hours the spacer regained it's original shape, the crushing due to the iron bars was less than 1 mm.

Load – bearing capacity max. (path limit 5mm)							
Test temperatures	21°C		40°C		0°C		
1.	3587	N	2976	N	3866	N	
2.	3663	N	3103	N	3951	N	
3.	4163	N	3142	N	3807	N	
Average	3804	N	3073	N	3874	N	

Summarising it can be stated that the specified load – bearing capacity of 1 kN was achieved at all test temperatures with a deformation of max. 3 mm.

Even under the maximum load the tolerance of +/- 1 mm (concrete cover) was not exceeded after the load was removed (with remaining residual load). The recovery capacity is, on the whole, to be regarded as good.

The load – bearing capacity can be seen from the following diagrams.



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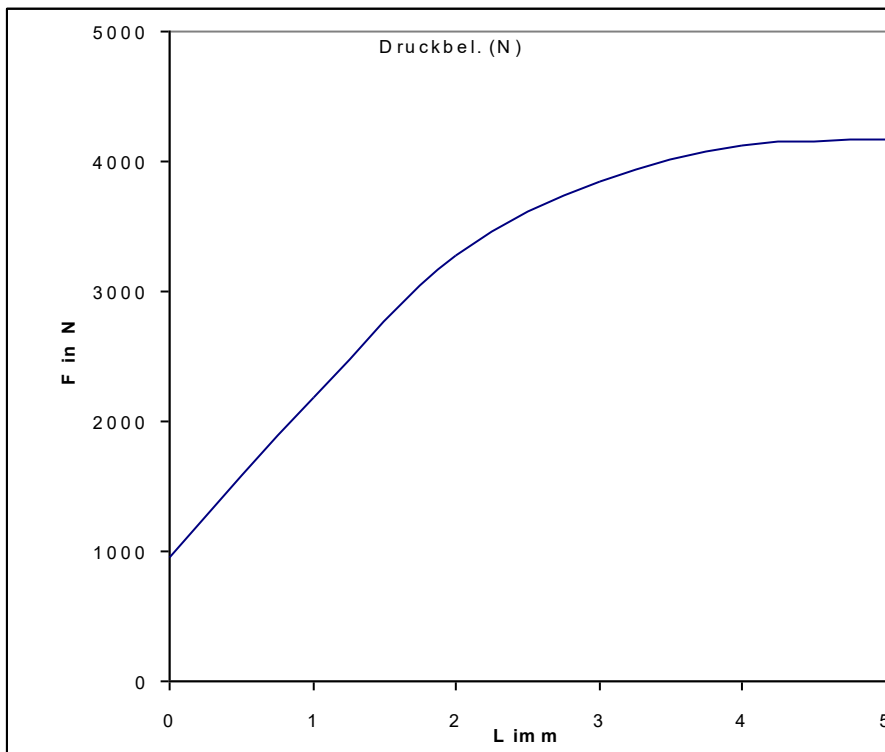
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Loading test ZZ strip 30

Temperature 21°C

Path (mm)	Pressure load (N)
0	948
1	2180
2	3281
3	3850
4	4125
5	4163





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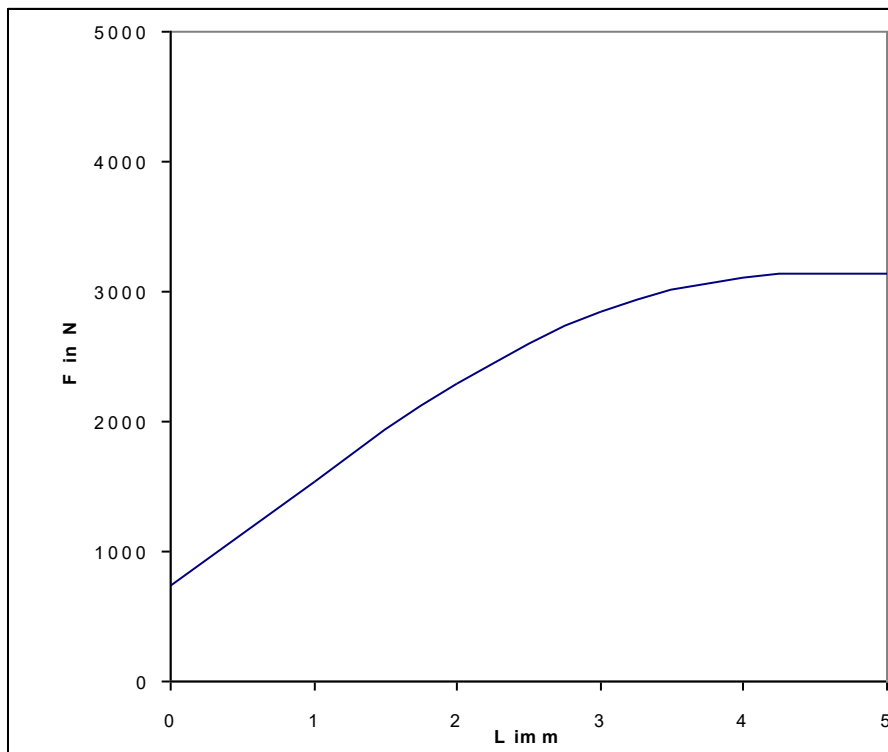
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Loading test ZZ strip 30

Temperature 40°C

Path (mm)	Pressure load (N)
0	745
1	1532
2	2299
3	2847
4	3109
5	3142





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Loading test ZZ strip 30

Temperature 0°C

Path (mm)	Pressure load (N)
0	770
1	1709
2	2589
3	3268
4	3715
5	3807

