

COMPRIBAND INFORMATION

General

Compriband is a pre-formed resilient sealing and expansion jointing material produced by a process which combines specially prepared bitumen and permanently elastic open celled foam. The cell walls of the foam are evenly coated with a film of bitumen. The natural characteristics of the two materials combine to create a unique material.

Permanently Elastic:

If Compriband is compressed, it will recover back to its original shape once the pressure is released. The compression and release may be repeated at will.

Compression Set or Deformation:

Recovery of the Compriband will never be to its exact original size. For example, a strip of Compriband 100mm thick will not recover to precisely 100mm, but only to 97mm. This difference between the original size and the recovered size after compression is known as compression set or deformation. The maximum compression deformation of Compriband amounts to 3%.

Compression Characteristics:

On compression of Compriband, the cells of the foam impregnated with bitumen close to form an intimate mass. A watertight seal is achieved in this manner.

Impregnation Medium:

The impregnation medium of Compriband consists exclusively of bitumen and carefully selected additives to improve the physical aspects of the material, no softener is involved. For this reason the permanent heat resistance of Compriband lies in the region of +85°C. Furthermore, the bitumen employed is an oxidised bitumen giving Compriband very good resistance against ageing.

Ageing:

This is the reaction caused by atmospheric influences such as ultra violet rays, exhaust gases of acidic or basic nature, acidic or basic lixiviation, ozone corrosion, water and others. This ageing is present in any material. Accelerated ageing tests, together with **actual** installations now over 20-years old, show that Compriband has a working life well over 25-years. When exposed Compriband will age only on the surface. This ageing occurs to a depth of 2mm in the first year, 1mm in the second year and 0,1mm in the third year and thereafter is non-migratory as the surface then protects the Compriband from further ageing.

Chemical Resistance:

Compriband is unaffected by normal industrial or domestic effluents. In general Compriband is resistant to a wide range of acids (with pH-values up to 7) and alkalis (with pH-values between 7 to 14) — see attached diagram. Furthermore,

Compriband is resistant to mordant acids, soldering fluids, cement damaging waters (to DIN 4030) suds and de-icing salts, the latter being most important during the application of Compriband for bridge expansion joint seals.

Surface Adhesion:

On compression of the Compriband and insertion into the joint, an adhesion takes place between the bitumen and, for example, the cement. This adhesion will occur only in temperatures above +8°C. The strength of the adhesion can of course be measured. The breaking point of the adhesion between Compriband and concrete is around 18N/cm², which means that at this force the Compriband will separate from its concrete contact surface. This value of 18N/cm² is slightly above the tensile strength of the Compriband. The tensile strength being the measure of the cohesion within the Compriband. From these values it can be seen that the Compriband will firstly split down its middle on the over-extension of a joint, before it will separate from its contact surface. The maximum extension of Compriband within a joint naturally depends on its degree of pre-compression. With correct dimensioning of the Compriband, 100% joint extensions can be absorbed.

The adhesion values of Compriband to various surfaces is given below:

1) Concrete	Max. 18N/cm ²
2) Steel	Max. 10N/cm ²
3) Epoxy	Max. 2 to 5N/cm ²
4) Epoxy mortar (with not more than 10% epoxy)	Max. 12 to 15N/cm ²
5) Glass	Max. 8N/cm ²
6) Aluminium	Max. 8 to 10N/cm ²
7) Wood	Max. 12 to 15N/cm ²
8) PVC	Max. 3 to 7N/cm ²
9) Brick	Max. 15N/cm ²
10) Painted surfaces	Max. 3 to 7N/cm ²

Compression Characteristics

On compression to 25% of its original volume, Compriband has the following properties:

Isolator:

The specific electrical resistance is around 10¹⁰ ohm x cm. This value is sufficient to isolate usual electric tensions.

Resistance to diffusion:

The factor of resistance to diffusion of water vapour is 18 000.

Thermal Conductivity:

This is approximately 0,05 W/mK.

Fire Resistance:

At 25% compression Compriband is classified for its class of fire protection as "normally inflammable".

Movement Absorption:

At this compression, Compriband can absorb movements of concrete panels of up to 12-metre lengths.

Load bearing Capacity:

Where Compriband is employed as a bearing pad for building construction or as an anti-vibration pad for the mounting of machinery, it can support a maximum load of 18Kg/cm².

Compatibility with Other materials:

- 1) Compriband is completely compatible with normal building and construction materials.
- 2) Compriband does **not** increase the ageing of the softeners in PVC or other materials.
- 3) Compriband does **not** combine with sealants based on polysulphides or silicone rubbers, which contain more than 50% reactive material. This means no three-point adhesion of the sealant occurs.

Compriband Resists:

- 1) It is resistant against Alpha - and Beta-rays.
- 2) On compression to 25% of its original volume, it is immune to drain water with variable pH values. (2-12 at +35°).
- 3) No known case of instability of Compriband exists in any building construction due to motor vehicle exhaust gases with high sulphur dioxide or nitric oxide values.

Compriband Does Not Resist:

- 1) Attack due to active chlorine.
- 2) Attack by active oxygen, gamma- and neutron radiations.
- 3) Petroleum solvents, oils, selected waxes and heavily oxidised acids or strong lyes.

Duration of reaction at 20°C		1d	7d	21d	1m	1d 75°C	21d 55°C	14d 75°C
1. caustic soda	3%	★	★	★	★	★	○	○
	5%	★	★	★	★	□	○	○
	10%	★	★	★	★	□	○	○
2. hydrochloric acid	3%	★	★	★	★	★	□	□
	5%	★	★	★	★	□	□	○
	10%	★	★	★	★	□	□	○
3. sulphuric acid	5%	★	★	★	★	★	□	□
	10%	★	★	★	★	★	□	□
	20%	★	★	★	★	★	□	□
4. nitric acid	1%	★	★	★	★	★	★	□
	3%	★	★	□	□	□	○	○
	5%	★	□	□	○	○	○	○
5. acetic acid	5%	★	★	★	★	★	★	★
	10%	★	★	★	★	★	★	★
6. ammoniacol water	5%	★	★	★	★	★		
	10%	★	★	★	★	★		
7. citric acid	10%	★	★	★	★	★	★	★
8. lactic acid	5%	★	★	★	★	★	★	★
9. oxalic acid	10%	★	★	★	★	★	★	★
10. sodium chloride (kitchen salt) concentrated solution		★	★	★	★	★	★	★
11. calcium carbonate, concentrated solution		★	★	★	★	★	★	★
12. trisodium phosphate	10%	★	★	★	★	★	★	★
13. urea solution	10%	★	★	★	★	★	★	★
14. sea-water, North Sea		★	★	★	★	★	★	★
15. soap solution	1%	★	★	★	★	★	★	★
16. washing, detergent (SUNIL)	1%	★	★	★	★	★	★	★
17. "PRIL"	1%	★	★	★	★	★	★	★
18. "LENSEX" (Shell-Chemicals)	1%	★	★	★	★	★	★	★
19. pli-value 2 (sulph. acid)		★	★	★	★	★	★	★
20. pli-value 12 (natruium lye)		★	★	★	★	★	★	★
21. amyl acetate		Bitumen is slowly washed out.						
22. heavy duty oil		id.						
23. floor polish-wax		id.						
24. methyl ethyl alcohol		id.						
25. ketones, in general		id.						
26. petroleum and derivatives		not resistant						
27. gasoline, all kinds		id.						
28. higher aromatic hydrocarbons and ester		id.						

LEGEND

★ = completely resistant

□ = slow attack, hardening of the strip, getting brittle

○ = destruction

d = day

m = month

FOR FURTHER INFORMATION CONTACT US AT:

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