



شركة مصنع الطاقة الكامنة ذ.م.م.
KINETIC ENERGY FACTORY CO. W.L.L.

Comlin Isolation Products



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Comlin Isolation Products

Comlin products isolate pipework from their supports or surrounding metal structure with the intention of reducing noise, vibration, wear and galvanic corrosion. It has been proven in a wide range of harsh environment market sectors, including petrochemical, offshore and marine construction industries. Comlin also finds extensive use in naval and offshore applications where living and working quarters are located near active pipework.

Comlin isolation products have been developed to provide the specifier with certainty regarding their benefits and long term performance. The predictable behaviour of Comlin allows superior maintenance and replacement strategies to be undertaken and thereby offers more effective management of these costs.

It is often assumed that control of vibration, noise and other inter-metallic effects can be managed by the application of low cost rubber wrap between a pipe and its support. This approach risks overlooking important factors such as wear characteristics of the compound, its environmental performance and response to heat or flame.

Bergen Pipe Supports commissioned the University of Salford to examine the acoustic damping performance of their Comlin isolation products. Testing at the University's Acoustic Research Centre confirmed improvements in vibration isolation of up to 32dB with consequent reduction in emitted noise. The Comlin material, available in three different grades, provides operating temperature ranges of up to 300°C as well as other benefits such as high resistance to UV degradation. Fuller specification is provided in the table.

Comlin isolation products are available as pre-formed U-bolts, pre-formed clamp strips for existing fittings and plain strip in three grades, including a flame retardant option. The grades are produced in different colours to ensure ease of identification.

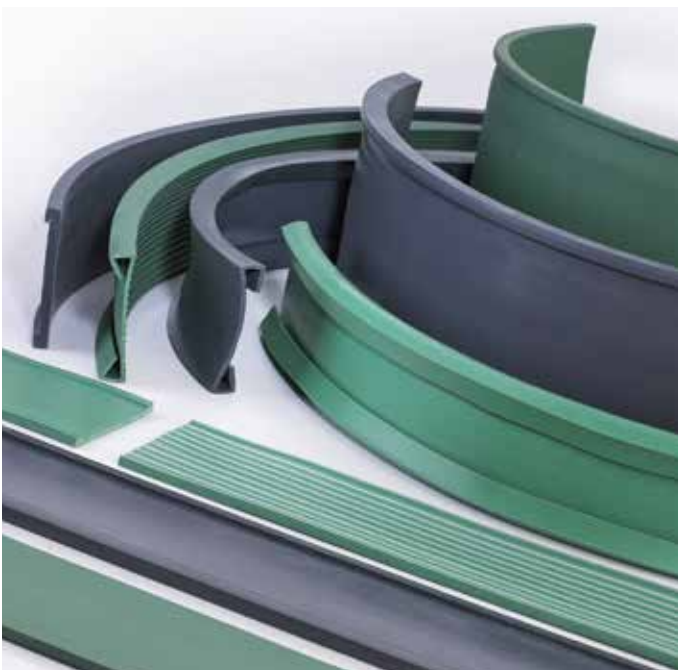


Key Functions of Comlin

- Prevents galvanic corrosion by isolation of dissimilar metals in the presence of an electrolyte.
- Damps vibration between pipe and connecting structure, considerably reducing resultant noise.
- Prevents wear and/or crushing of composite, thin wall non-ferrous pipework.

8001 U-bolts

The 8001 U-bolts have been specifically developed to provide enhanced acoustic damping. They are supplied in the HTFR65 grade of material and have been tested extensively to confirm their acoustic behaviour. The U-bolts are suitable for use in vessels, buildings and structures where accommodation is provided. Available as standard for all pipes of nominal bore from 2" to 10".



Comlin Grades

RG45

RG45 is a specially formulated low modulus polymer suitable for applications that require a very soft and flexible support, e.g. very thin walled pipes. It has excellent low temperature performance and is capable of operating within the temperature range -60°C to 125°C, with the added advantage of being stable in an irradiated environment. It has very good compression set characteristics and withstands ozone/UV exposure and weathering. Available as standard for all clamp liners.

RG45LF

RG45LF is our own unique low-friction form of the RG45 material which incorporates integral ribs of polypropylene co-extruded into the contact face of the product. This is achieved without loss of properties or reduction of temperature range. Available as standard for all clamp liners.

Heat and Flame Performance

FR80, FR80LF and HTFR65 were tested in accordance with section 7 of the UL94 Standard for Safety – ‘Horizontal Burning Test for Classifying Materials HB.’ The results showed all three grades of Comlin have a classification of HB.

Property	Test Method	Unit	Material Grade				
			RG45	FR80	HTFR65	RG45LF	FR80LF
Hardness, 5 Sec	D2240	Shore A	45	80	65	50	85
Specific Gravity	D297		0.97	1.24	1.31	1.05	1.31
Ultimate Tensile Strength	D412	MPa	1.2	7.2	7.5	1.2	7.2
Ultimate Elongation	D412	%	300	410	350	300	410
100% Modulus	D412	MPa	1.2	3.2	4.0	1.2	3.2
Compression Set @ 168 Hrs. 25 °C	D395B	%	13.0	27.1	10.0	13.0	27.1
Compression Set @ 168 Hrs. 100 °C	D395B	%	22.0	46.3	15.0	22.0	46.3
Tension Set	D412	%	5.0	10.0	12.0	5.0	10.0
Brittle Point	D746	°C	-76.0	-56.0	-70.0	-76.0	-56.0
Maximum Continuous Temperature		°C	125	150	300	125	150
Oxygen Index	D2863		–	25.0	35.0	–	25.0
Horizontal Burn	UL94 HB		–	HB	HB	–	HB
Ozone/UV Resistance			V.Good	V.Good	V.Good	V.Good	V.Good
Dielectric Constant			2.3	2.44	2.8	2.3	2.44
Colour Code							
Type 801			–*	Black	Grey	–	–
Type 802			–*	Red	Grey	–	–
Type 901			–	–	–	–*	Black
Type 902			–	–	–	–*	Red
Type 816			Beige	Green	Grey	–	–
Type 817			Beige	Green	Grey	–	–
Type 818			–	Green	–	–	–
Type 916			–	–	–	Beige	Green
Type 917			–	–	–	Beige	Green
Type 918			–	–	–	–	Green

*Available upon special request — non-stocked products.

FR80

Comlin extrusion type FR80 is the standard grade of material used in situations where a firm grip between the pipe and restraint is required whilst providing a barrier against galvanic corrosion, wear, vibration and noise transmission. This material has an oxygen index of only 25%, good resistance to ozone & UV attack and very good flex fatigue. It is suitable for most applications within the temperature range of -50°C to 150°C. Available as standard for all product forms.

FR80LF

FR80LF is the low-friction variant of the FR80 material. It is co-extruded with a polypropylene facing to allow the pipe to slide through the U-bolt, U-strap or clamp. It has the same basic properties of FR80 but is used where guidance rather than firm restraint is required. Available as standard for all product forms.

HTFR65

HTFR65 is a higher specification material suitable for applications within the temperature range of -60°C to 350°C. Based on silicone technology, it has excellent resistance to fire, very low toxicity and can operate continuously at 300°C with minimum loss of performance. The material has excellent resistance to ozone, UV and weathering, very good compression set and is generally resistant to occasional contact with oils. This material is also used where a firm grip between pipe and restraint is required and is the most popular grade available. Due to the high temperature range capability of this material, it is not possible to provide it with our low-friction facing material. Available as standard for all product forms.

Reports Referenced

Elliot, A., 2015. ACOUS01911: Measurement of pipe support dynamic transfer stiffness and insertion loss – evaluation of new anti-vibration mount type F8001. Manchester: University of Salford.

Exova Warringtonfire, 2016. UL94: Horizontal Burning Test for Classifying Materials HB. Newbridge: Exova (UK) Limited.



BERGEN PIPE SUPPORTS

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