



**Five Decades of Sealing Experience  
Creating Gaskets for your Future**





# Valued & Sustainable Sealing



In the early 1990s, asbestos became a banned substance due to its direct link to harmful human health effects.

Since that time, only a select few gasket producers worldwide have mastered the transition to a 100% asbestos-free process and continuously evolved the technical skills necessary to meet Original Equipment Manufacturer's (OEM) stringent and ever-changing requirements.

As the years pass, through consolidations, fewer qualified material producers possess the necessary history and know-how in the sealing materials marketplace.

At Omnia, we are proud to say we are among the select few worldwide material producers remaining in the market, mastering asbestos-free sealing materials exclusively, even before the ban went into effect.

We have honed our expertise over many decades with significant investments in R&D, capital assets, and retaining and attracting genuine human talent, constantly strengthening our market reputation.



## *An alternative approach*

Over the past three decades, the selection process for sealing materials has traditionally been imposed by a direct connection between gasket material producers and OEM's, who specify the name of each approved material.

Once approved, these materials and specifications are dictated to all gasket cutters. At Omnia, our market approach remains somewhat different.

- We believe our customers (gasket cutters) have developed a deep understanding of the sealing market and deserve the right and ability to control their destiny.
- We value our customers' daily interaction with both OEMs and other customers.
- We offer Omnia's historical and advanced sealing material knowledge as a resource to our customers.

**With over half a century of experience developing and manufacturing sealing materials, Omnia has the required know-how and has successfully created**

and sold nearly sixty different types of sealing materials worldwide.

This success is a testimonial to the commitment we make in **collaborating with our customers in both the process of selecting or designing the most appropriate material for any given sealing application.**

## *Customer tailoring: developing your material together*

Omnia has a proven global record of developing appropriate sealing materials tailored to meet customer application needs.

This should read as: **We believe our willingness and know-how, matched with our customer's experience and capabilities, represent a win-win solution to create unique products and competitive sealing solutions for even the most demanding OEM applications.**





*International Standards: available tools for material selection.*

At Omnia, we openly share the most appropriate material selection tools with our customers to guide them through the proper International Standards that identify and target specific performance criteria.

The benefit of our approach avoids using oversized materials by showing unnecessary performances usually hidden behind mysterious internal standards.

In addition to traditional technical requirements, such as **Compression/Recovery, Tensile, Fluids Absorptions, and Aging**, we believe the following recognized **International Standards (ASTM, DIN, GB/T 推荐)** are generally a better fit for characterizing most evolved materials. We also think they do a superior job of defining the final technical requirements of each end sealing application.

**ASTM F38**

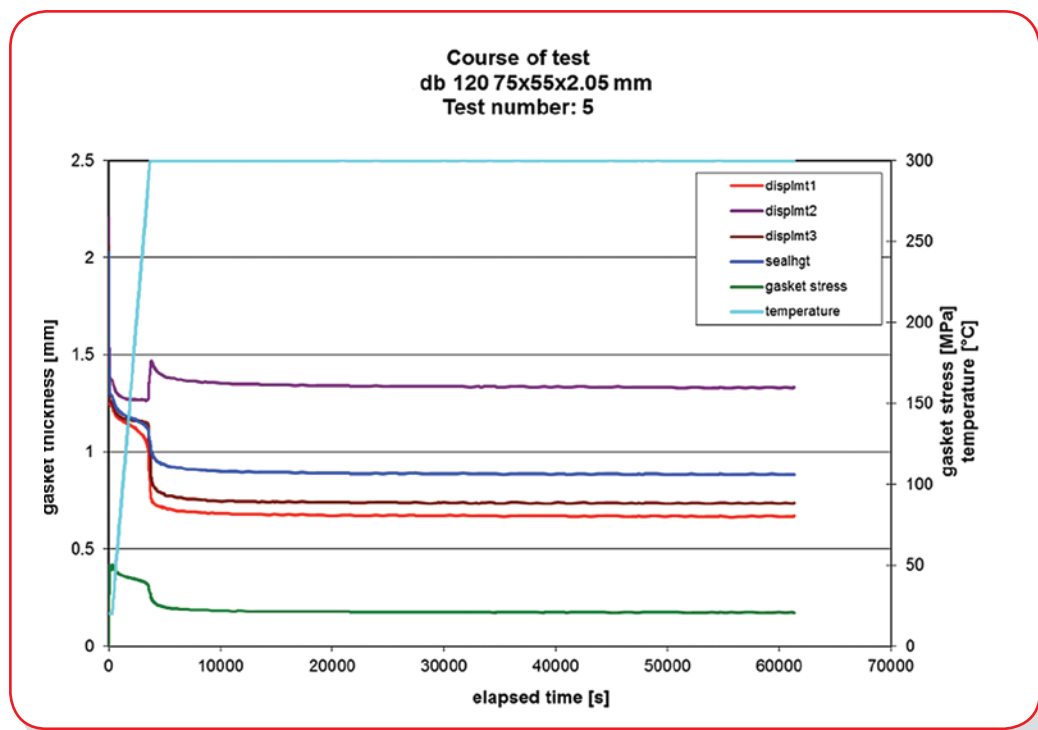
**Test Method B - Standard Test Methods for Creep Relaxation of a Gasket Material**

**Scope:** This test method provides a means of measuring the amount of creep relaxation of a gasket material at a stated time after **applying compressive stress**. Test performed for 22h at a continuous temperature of 105°C and 205°C.

**ASTM F37**

**Test Method B - Standard Test Method for Sealability of Gasket Materials**

This test method is suitable for evaluating the sealing characteristics at room temperature of gasket material under different compressive flange loads. This test **method measures leakage rates** as high as 6 L/h and as low as 0.3 mL/h.





**Gb/t12385 – 2008 推荐**

This test method is suitable for evaluating the oil sealing performances of a gasket material under different increasing internal fluid pressures at a defined surface load.

**ASTM F1574**

**Standard Test Method for Compressive Strength of Gaskets at Elevated Temperatures**

The compressive strength and crush-extrusion resistance of gasket material are significant factors in selecting a given material for use in a particular sealing application. The significance of the test method is based, in part, on the assumption that sealing material, once it has been crushed or extruded, could no longer effectively function as a seal.

**DIN 52913**

Hot Compression Creep testing of gaskets indicates joint longevity.

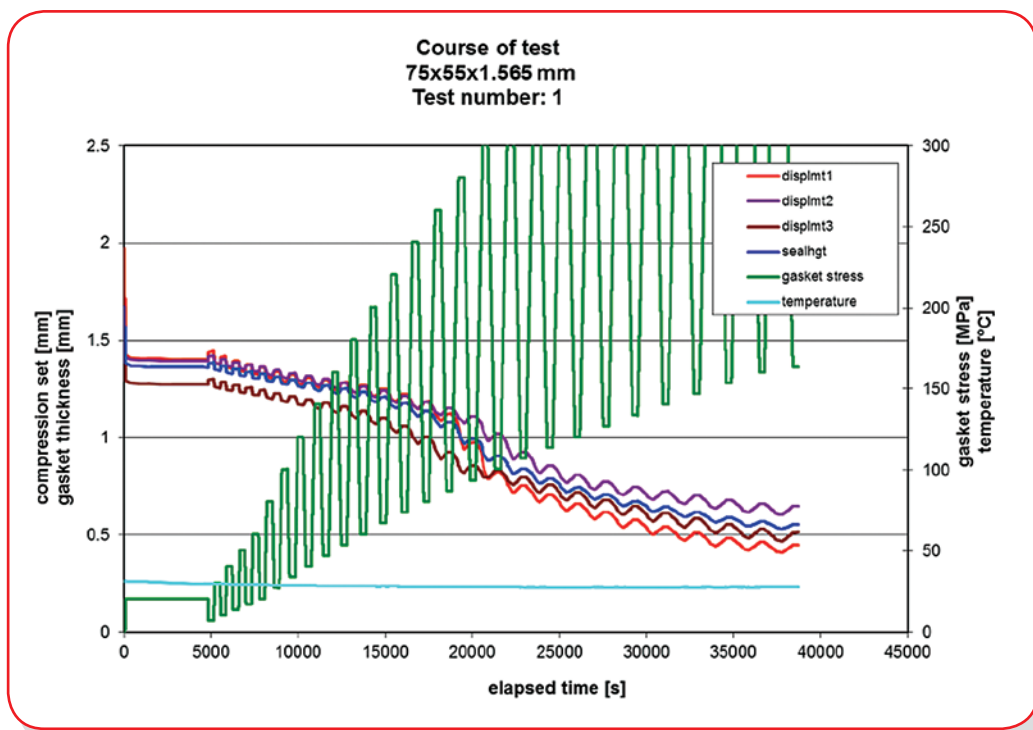
Temperature, compressive load, and duration rank

the ability of a material to maintain its thickness, which shows how well a flanged joint will maintain its tightness.

**EN13555: 2021**

The most recent version specifies gasket parameters (required by EN1591-1 testing), which are the most important properties of any given gasket material.

- Sub 8.8 - Qmin (L) - QSmin (L): test procedure consists of loading and unloading the material at increasing surface pressures, measuring leak rate with an internal pressure of 40 bar.
- Sub 8.5 - QSmax: This is a test procedure consisting of raising temperature and surface pressure to a required value, then carrying out cyclic compression/recovery loadings at progressively higher surface pressures until the gasket collapses.
- Annex H / Surface Friction: The coefficient of static friction  $\mu G$  is relevant to determine the ability of a gasket to counterbalance the acting shear forces and torsion moments.





## Material Selection - Doing More with Less

To allow customers to simplify their stock management system, we applied our experience to develop a condensed product category called Torbust that comprehensively covers all fundamental sealing performances recognized by International Standards.

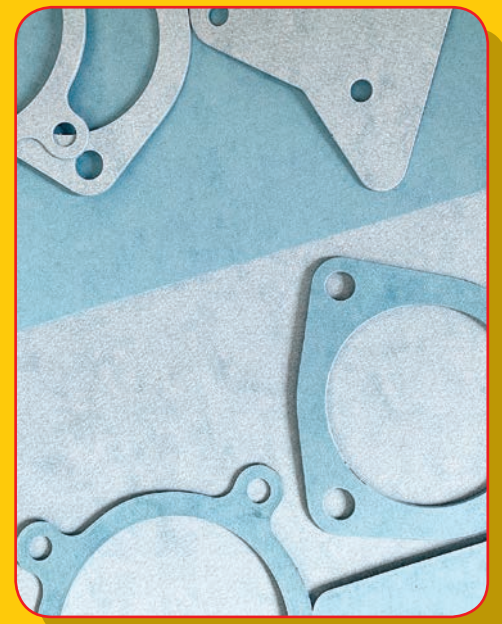
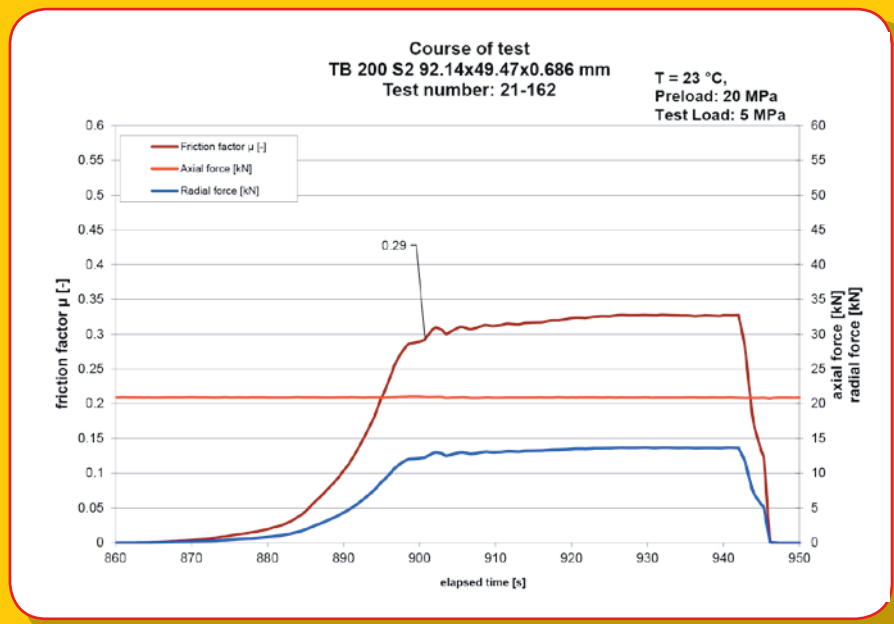
In the Torbust Table below, we synthesize our product offering according to leading worldwide standards and related performances:

TorBust								
PROPERTY	NORMS	TB200	TB540	TM150	TB450	616	TB15	TN16
Compressibility	ASTM F36	●	●	●	●	●	●	●
Recovery		●	●	●	●	●	●	●
Tensile strength	ASTM F152	●	●	●	●	●	●	●
Media Fluid Resistance	ASTM F146	Cooling liquid	●	●	●	●	●	●
		Fuel B	●	●	●	●	●	●
		Oil	●	●	●	●	●	●
Sealability	ASTM F37B	●	●	●	●	●	●	●
	Gb/t12385-2008 推荐	●	●	●	●	●	●	●
	EN13555 8.8	●	●	●	●	●	●	●
Creep Relaxation	ASTM F38B	105°C	●	●	●	●	●	●
		205°C	●	●	●	●	●	●
Crush test	ASTM F1574	150°C	●	●	●	●	●	●
Compression Creep	DIN 52913 16 @ 50 Mpa	150°C	●	●	●	●	●	●
		175°C	●	●	●	●	●	●
		210°C	●	●	●	●	●	●
		300°C	●	●	●	●	●	●
	EN135555 8.5	175°C	●	●	●	●	●	●
Coating (friction coefficient)	EN13555 Annex H	NO	●	●	●	●	●	●
		WS2	●	●	●	●	●	●

- Excellent
- Very good
- Good
- Fair
- Poor

## Coating

Increasing attention to anti-stick properties is finally finding an appropriate International Standard (EN13555) to determine gasket-flange Surface Friction Factor ( $\mu$ G). At Omnia, we assist our customers in the coating selection process under any given Surface Friction Factor.





## Competitiveness

Our larger purpose has always been to create value for our customers by ensuring they only pay for materials required to meet specific end applications. As a result, our customers avoid purchasing potentially **over-engineered** materials.

Our long-term customers have also appreciated Omnia's demonstrated ability to help avoid the standard practice of just passing along higher costs in the form of the never-ending cycle of uncontrolled escalations in selling prices.

Omnia is committed to proactively working with our customers to help achieve general price stability over the long term.

## Sustainable Grades

Our first-generation Asbestos-free materials, with decades of success, still offers a valid option for more competitive Aftermarket needs

		Sustainable					
PROPERTY	NORMS	33G	33V	507	510	Torflex	413
Density	ASTM F1315 (gr/cm <sup>3</sup> )	0,65	0,75	0,7	1	1	1,3
Compressibility	ASTM F36	●	●	●	●	●	●
Recovery		●	●	●	●	●	●
Media Fluid Resistance	ASTM F146	Cooling liquid	●	●	●	●	●
		Fuel B	●	●	●	●	●
		Oil	●	●	●	●	●
Creep Relaxation	ASTM F38B	100° C	●	●	●	●	●
Compression Creep	DIN 52913	16h@ 50Mpa-150°C	●	●	●	●	●
Sealability	ASTM F37B	●	●	●	●	●	●

Excellent
  Very good
  Good
  Fair
  Poor

## ESG (Environmentally Sustainable Company Governance)

Our certification to the ISO 14001 standard demonstrates our commitment and attention to environmental protection.

Our **investments** and know-how are constantly oriented **toward** lowering Omnia's environmental impact and improving our process solutions.

Our products are in REACH compliance, and we are proud of our achievements in creating products with evolved sealing performance standards, all without facilitating any presence of SVCH substances.







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