

Mill and Scrubber Linings



Mining and Mineral Processing
MillTough™ wear resistant Mill and Scrubber Linings
www.trelleborg.com/fluidhandling



MILLTOUGH™ RUBBER LINING SYSTEM

Grinding mills play a key role in comminution and mineral dressing and are subjected to severe impact and abrasion from the mineral being ground and from the media that is introduced in the mill to help break down the product.

Trelleborg has been at the fore front of specialised rubber compound development for milling applications. Trelleborg takes pride in working closely with our customers on improving liner designs.

The liner and compound development is undertaken to target enhanced availability of the mill (reducing down time losses) with increased efficiency in grinding, and reduction in power drawn.



All MillTough™ lifters come complete with aluminium and steel tracks with different face angles to suit the milling or scrubbing application. Trelleborg also tailor make a wide range of shell plates, grate plate, head plates and filling segments including the backing rubber to protect the mother plate of the mill/scrubber. Trelleborg also maintains a standard range of MillTough™ fixings to completely seal and protect.

DESIGN AND IMPROVEMENTS

Trelleborg designs are based on optimization with efficiency in grinding, reduction in power draw and availability of the equipment. Also includes a wide selection of rubber compounds for improved wear life.

MILLTOUGH™ PREMIUM GRADE RUBBER VS COMPOSITE STEEL LININGS

- Lower cost.
- Reduced weight.
- Less power draw.
- Reduced load on mill bearings, etc.
- Easy and faster install.
- Noise reduction.
- No cracking or falling inserts - Safe.
- Easy wear life monitoring.

Trial carried out with Trelleborg premium grade 1605AM rubber compound vs competitors composite steel linings in ball mill dia. 5490mm x 7625mm long was successful, resulting in complete change out of shell linings.

MILLTOUGH™ RUBBER LINING SYSTEM PRODUCT RANGE

Trelleborg has a wide range of MillTough™ rubber lifter bars and plates for ball mills, rod mills and drum scrubbers. MillTough™ standard rubber lifter sizes are as follows:

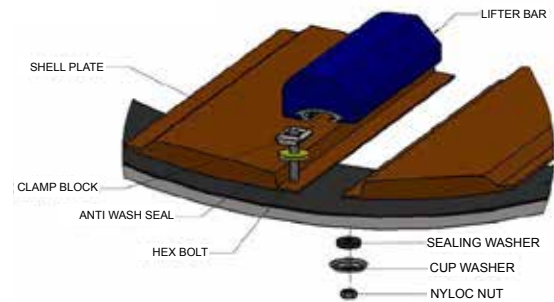


Width	Height
250mm	250/300/350/400mm
210mm	140/160/180/200/225/250mm
200mm	200mm
165mm	140/160/180mm
150mm	150/160mm
140mm	135mm
125mm	125mm
100mm	100mm
50mm	50mm

Trelleborg works on the principle of continuous improvement to add value to the operation of the processing plant as a whole and strives to attain ultimate customer satisfaction.

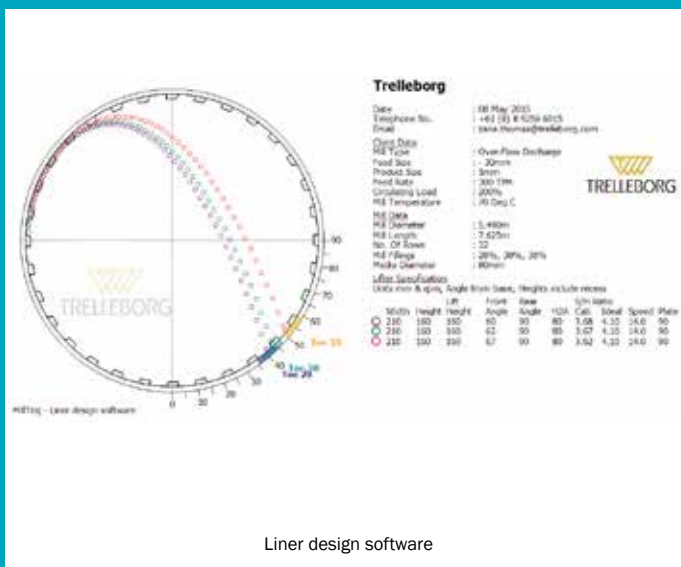
ADVANTAGES OF MILLTOUGH™ LINING SYSTEMS

- Improved liner life.
- Less weight overall with reduced impact on rotating components.
- Easy handling and installation.
- Less downtime.
- Noise reduction.
- Leak proof fastening system.
- Easy wear monitoring and wear life predictability.
- Fixing design eliminates bolt breakages during operation.

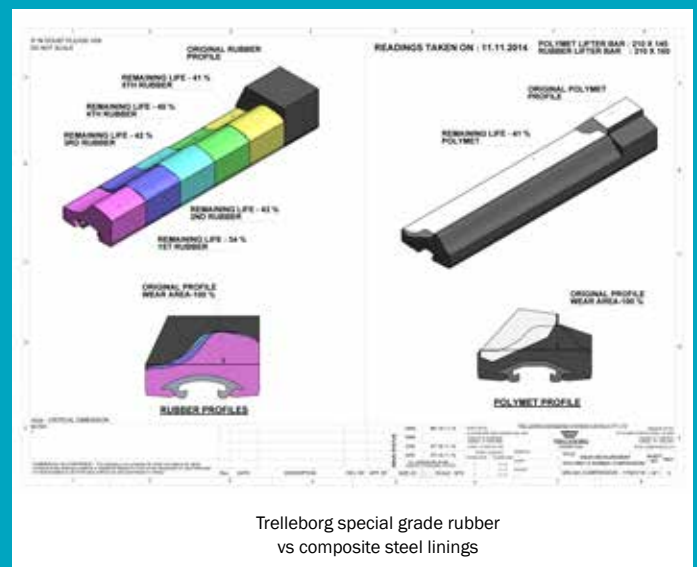


Typical fixing assembly

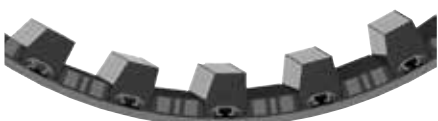
MILLTOUGH™ PREMIUM RUBBER LINING SYSTEM



Liner design software



Trelleborg special grade rubber vs composite steel linings



MILLTOUGH™ PULP DISCHARGE LININGS

Trelleborg Fluid Handling Solutions designs and manufactures pulp lifter packages for AG, SAG, ball mills and scrubbers.

Improved throughput, wear life (with indicator layers for easy inspection and monitoring) are the main criteria considered.

PULP LIFTER COMPONENTS

- Inner and outer pulp lifters.
- Discharge cone liner.
- Grate plates.
- Pan support filler rings.
- Clamp rings.

MILLTOUGH™ EXTREME COMPOSITE LINING SYSTEM

Trelleborg MillTough™ extreme composite linings are designed with select special steel composition to suit each milling application. MillTough™ extreme liners can be manufactured to a light duty or heavy duty modular design to keep in line with the lifting mechanism and safety regulations as required on site.


ADVANTAGES OF MILLTOUGH™ EXTREME COMPOSITE LINING

- More availability of the mill/reduced down time losses.
- Less handling and reduction in reline costs.
- Better sealing.
- Noise reduction compared to steel linings.
- Easy wear monitoring.



Trelleborg MillTough™ extreme lifter bars, along with MillTough™ extreme head plates, (head plates are twice the life of lifters).



An aerial photograph of a roof structure. The roof is divided into sections by dark, curved metal gutters. The left side of the roof is covered in reddish-brown tiles. The right side is covered in dark grey tiles. A large, dark, textured area, likely a composite lining system, is visible in the bottom right corner. The text "MILLTOUGH™ EXTREME COMPOSITE LINING SYSTEM" is overlaid in white, bold, sans-serif font across the center of the image.

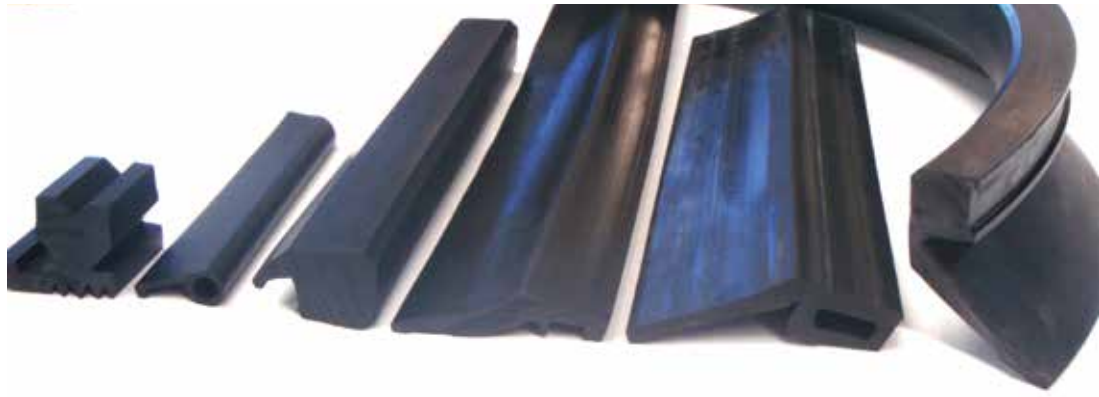
**MILLTOUGH™
EXTREME
COMPOSITE
LINING SYSTEM**



MILLTOUGH™ TRUNNION LINERS

Trelleborg manufacture and supply trunnion liners to suit various designs of mills and scrubbers.

MillTough™ trunnion liners are tailor made to suit specific applications. Fixing methods available are, direct bonded rubber, bolt in system, or hold down bars. Trelleborg has developed a 'T' tracked trunnion liner for easier installation. Lifter bars can be included in the trunnion to minimise sliding abrasion.



MILLTOUGH™ AUXILIARY EQUIPMENT

Trelleborg can supply all auxiliary items required for mill liner change outs, including:

- Extruded filler pieces.
- Extruded corner segments.
- Mill liner rubber backing, 6, 9 and 12mm thick.

Trelleborg supply all fastening components required for mill liner change outs, including:

- T bolts and clamp blocks.
- Cup washers.
- Integral sealing washers.

Trelleborg supply a complete range of backing rubber, extruded filler pieces and sealing strips.

AFTER SALES SERVICE AND TECHNICAL SUPPORT

Trelleborg's commitment to the continuous evaluation of our MillTough™ liners during operation, forms an integral part of our service. We work closely with our customers on wear monitoring, by assisting them in the development of preventative and predictive maintenance regimes.

During shut downs, Trelleborg personnel will take wear measurements on site and present drawings of wear patterns and an assessment of product life remaining, along with any improvements that can be offered.



Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way.

WWW.TRELLEBORG.COM

Scan here to view more product information



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