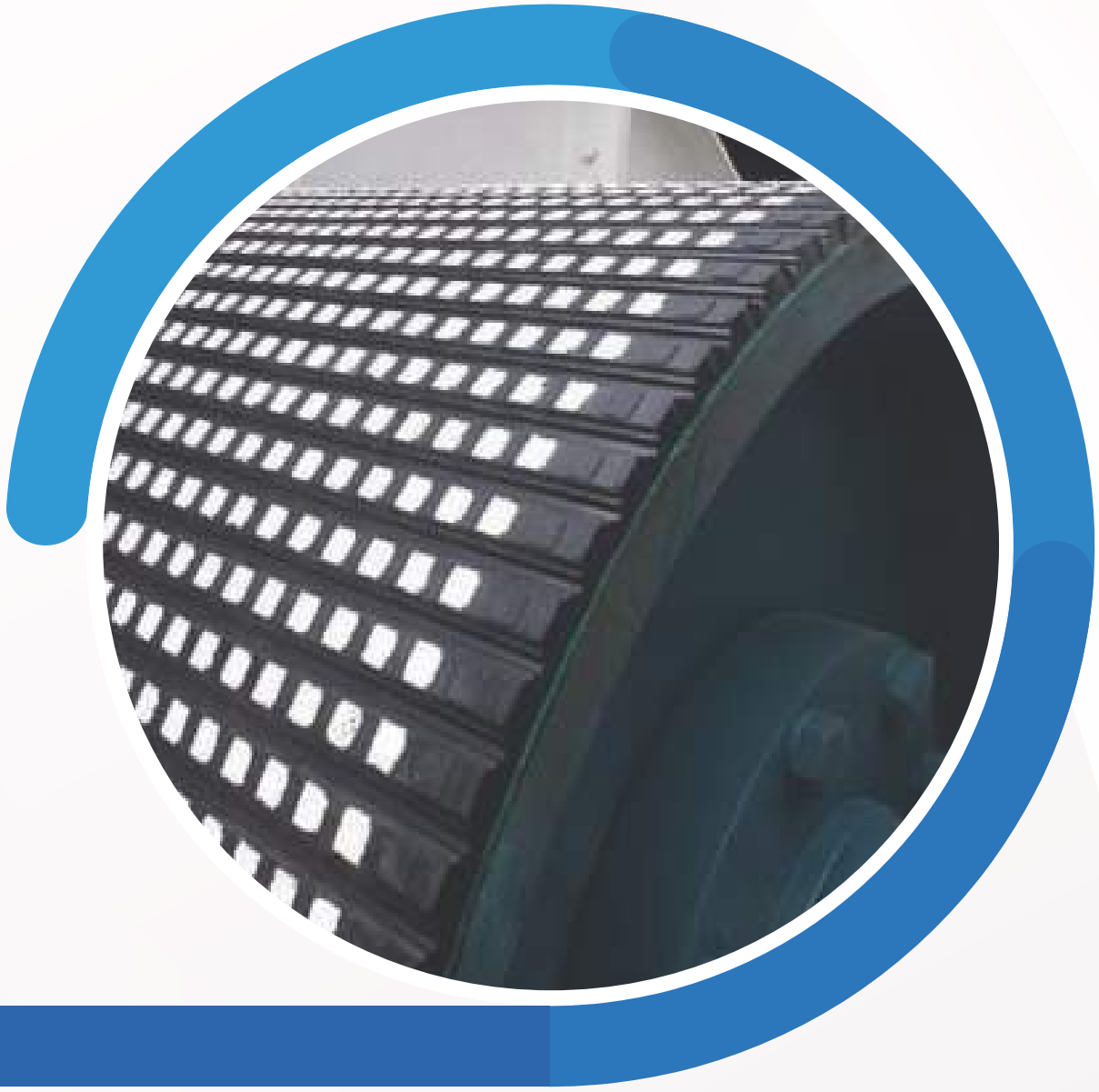
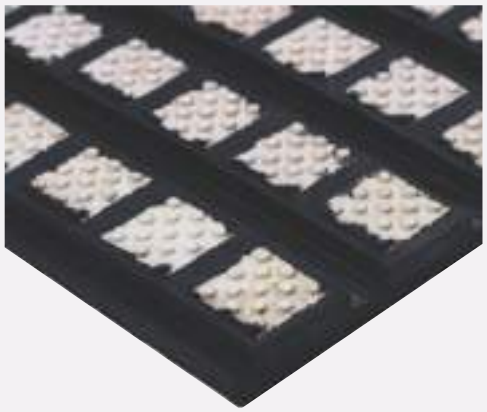


FORLAG: CERAMIC PULLEY LAGGING

FORLAG CERAMIC PULLEY LAGGING

FORLAG ceramic pulley lagging provides the best grip for your drive pulley. The ceramic inserts in the lagging surface provide both high friction and high wear resistance-providing the best protection for your pulley and belt in the most demanding conditions. Ceramic pulley lagging is ideally suited for wet and muddy conditions where belt slippage can be a major problem. The high co-efficient of friction of the ceramic tile inserts with the belt also allows for belt tension to be reduced. This also improves the life of the belt, as well as that of the other belt components as they come under less stress. The surface of the lagging is profiled similar to that of profiled rubber pulley lagging. This allows for effective drainage.



FORLAG Ceramic Lagging is offered as easy to install strips. These come with a bonding layer backing, or a buffed surface as per your needs and budget. Ceramic tiles embedded in rubber, are also supplied in Fire Resistant Anti Static(FRAS) approved grades of rubber compound for underground applications.

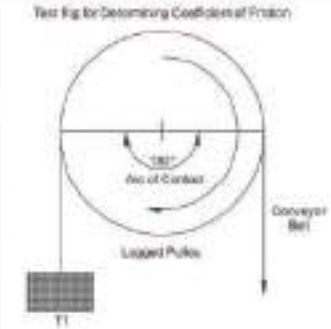
COEFFICIENT OF FRICTION

The maximum tension T1, generated in any conveyor belt is the tension which is required to be imparted on the belt in order to transmit, through traction, at the belt-pulley interface, the tension, Te, necessary to overcome all the system resistances and convey the desired through put at stipulated operating parameters in the diagram. The residual tension T2, is responsible for maintaining the integrity of the belt run and limits the inter-idler sag of the belt to permissible limits. The three tension values are related through mathematical equations, namely.

$$T1 - T2 = Te, \text{ and } T1/T2 = e\mu\emptyset$$

μ = Coefficient of friction between belt and pulley, $\emptyset$ = Arc of contact between belt and pulley

The value of μ is determined using the dynamic test rig as shown below. A section of belt is wrapped around a pulley (180 degree Arc of Contact) with a constant load on one end. Amotor applies a torque force to the pulley. At a threshold torque the pulley begins to rotate.



From the second relationship in the diagram ($T1/T2 = e\mu\emptyset$) we see that the tension on the belt (T1) increases significantly as coefficient of friction (μ) increase. Increasing the coefficient of the friction therefore has the following benefits:

- Reduced belt tension required
- Reduced slip and therefore less wear on belt and lagging.
- Reduced load on shaft and bearings

The frictional force is significantly increased in the ceramic lagging due to the mechanics of the dimples. However care has been taken that this does not damage the conveyor belt.

COMPARISON TABLE FOR CO-EFFICIENT OF FRICTION

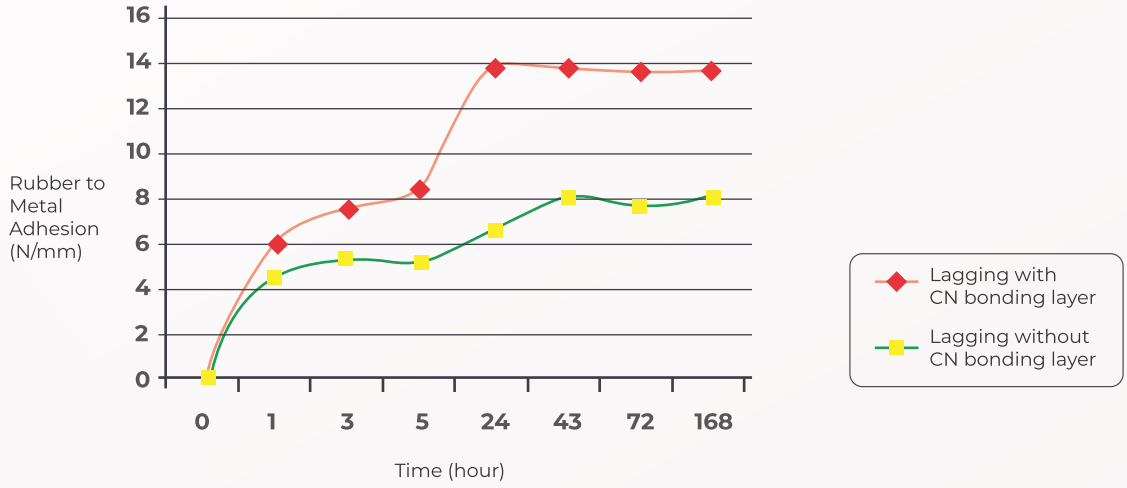
Co-efficient of Friction	Bare Steel Pulley	Rubber Lagging	Ceramic Lagging
Dry	0.25	0.50	0.75
Wet	0.15	0.35	0.55

Ceramic Tile Specifications	
Aluminium Oxide (min) Al_2O_3	92%
Density (g/cc)	3.65
Hardness (R 45 N)	79 min.
Cold Crushing Strength (Mpa)	2050 min.
Flexural Strength at Room Temp. (Mpa)	240 min.
Water absorption	0%

Test	Specification
Abrasion by impingement	0.05 grams max.
Abrasion by Rubbing	0.1 grams max.

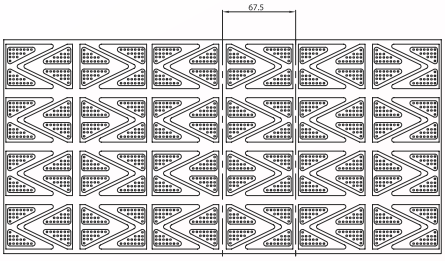
Base Rubber Specification	
Compound Code	R-1608
Polymer	SBR
Specific Gravity	1.13 +/– 0.03
Shore Hardness °A	60 +/– 5
Elongation at break % Min.	450%
Tensile Strength	17.5 N/mm²
Abrasion Loss	150 mm³ at 10N

SUMMARY RESULTS OF PULLEY LAGGING ADHESION TESTS

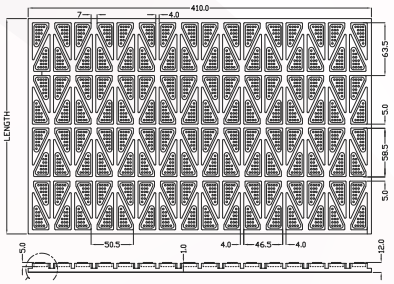


Pulley Lagging Selection Chart				
Criteria	Plain Sheet Lagging	Diamond Sheet Lagging	Rubber Strip Lagging	Ceramic Strip Lagging
Dry Performance	Very Good	Excellent	Excellent	Excellent
Wet Performance	Average	Very Good	Very Good	Excellent
Wear Life	Very Good	Very Good	Very Good	Excellent
Ease of Installation	Good	Good	Excellent	Excellent
Fire Resistance	Yes	Yes	Yes	Yes
Drainage Grooves	No	Yes	Yes	Yes

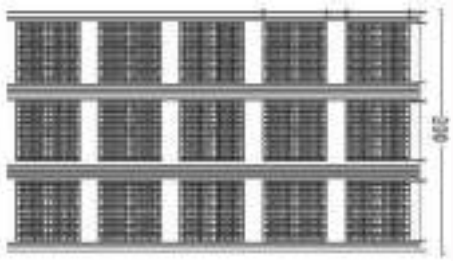
AVAILABLE DESIGN & PATTERNS



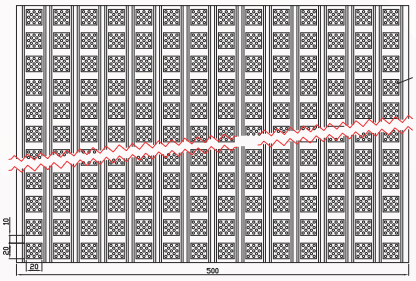
DESIGN
Triangular - Dimpled
PRODUCT WIDTH
200mm
AVAILABLE THICKNESS
12mm X 15mm
CERAMIC TILE SIZE
16mm X 26mm Triangle
CERAMIC TILE THICKNESS
5mm
CERAMIC COVERAGE AREA
25%



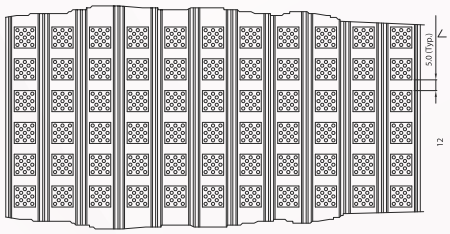
DESIGN
Square - Dimpled
PRODUCT WIDTH
410mm
AVAILABLE THICKNESS
12mm X 15mm
CERAMIC TILE SIZE
20mm X 20mm
CERAMIC TILE THICKNESS
5mm
GAP BETWEEN TILES
5mm
CERAMIC COVERAGE AREA
46%



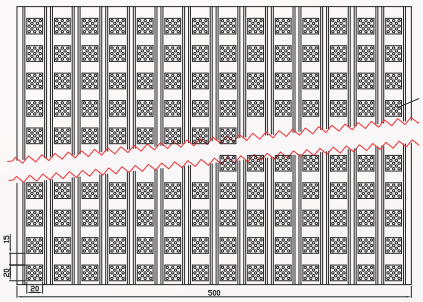
DESIGN
Square - Dimpled
PRODUCT WIDTH
200mm
AVAILABLE THICKNESS
12mm X 15mm
CERAMIC TILE SIZE
25.4mm X 25.4mm
CERAMIC TILE THICKNESS
7mm
GAP BETWEEN TILES
16mm
CERAMIC COVERAGE AREA
58%



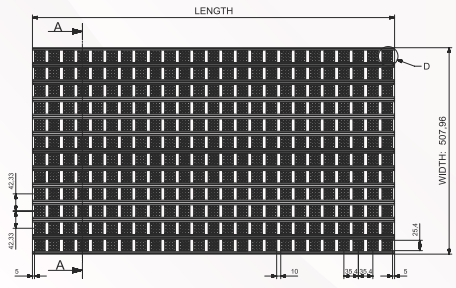
DESIGN
Square - Dimpled
PRODUCT WIDTH
500mm
AVAILABLE THICKNESS
12mm X 15mm
CERAMIC TILE SIZE
20mm X 20mm
CERAMIC TILE THICKNESS
5mm
GAP BETWEEN TILES
10mm
CERAMIC COVERAGE AREA
38%



DESIGN
Square - Dimpled
PRODUCT WIDTH
385mm
AVAILABLE THICKNESS
12mm X 15mm
CERAMIC TILE SIZE
20mm X 20mm
CERAMIC TILE THICKNESS
5mm
GAP BETWEEN TILES
5mm
CERAMIC COVERAGE AREA
46%



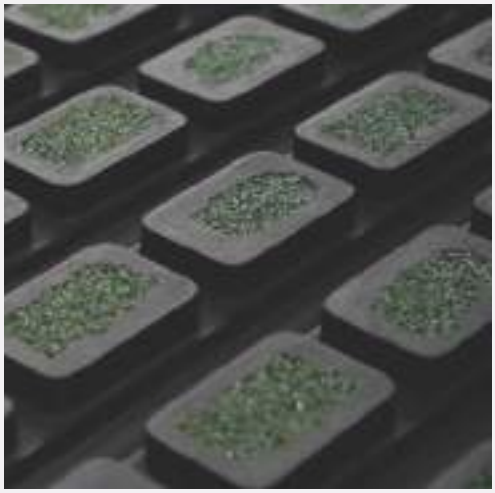
DESIGN
Square - Dimpled
PRODUCT WIDTH
500mm
AVAILABLE THICKNESS
12mm X 15mm
CERAMIC TILE SIZE
20mm X 20mm
CERAMIC TILE THICKNESS
5mm
GAP BETWEEN TILES
15mm
CERAMIC COVERAGE AREA
32%



DESIGN
Square - Dimpled
PRODUCT WIDTH
508mm
AVAILABLE THICKNESS
20mm Ceramic
CERAMIC TILE SIZE
25.4mm X 25.4mm
CERAMIC TILE THICKNESS
8mm
GAP BETWEEN TILES
10mm
CERAMIC COVERAGE AREA
44%

FORLAG: CERAMIC PULLEY LAGGING GREEN (CL-GREEN)

FORLAG ceramic pulley lagging with porous green ceramic non dimpled tiles provides the best grip for your drive pulley. The ceramic inserts in the lagging surface provide both high friction and high wear resistance-providing the best protection for your pulley and belt in the most demanding conditions. Ceramic pulley lagging is ideally suited for wet and muddy conditions where belt slippage can be a major problem. The high co-efficient of friction of the ceramic tile inserts with the belt also allows for belt tension to be reduced. This also improves the life of the belt, as well as that of the other belt components as they come under less stress. The surface of the lagging is profiled similar to that of profiled rubber pulley lagging. This allows for effective drainage.

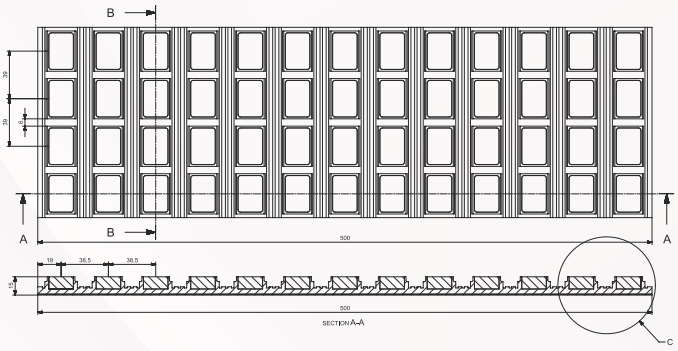


INTRODUCTION

Ceramic lagging is a crucial component in enhancing the friction between conveyor belts and pulleys, ensuring efficient and safe belt movement in industrial applications. The main purpose of ceramic lagging is to increase the friction coefficient, which helps in preventing belt slippage, improving operational efficiency, and extending the lifespan of both the conveyor belt and pulleys. Ceramic lagging typically comes in two types: porous and non-porous. Porous ceramic lagging, like the FORLAG: CL-Green features ceramic tiles with a high degree of porosity that retain friction properties over time, offering exceptional wear resistance and long-term performance. On the other hand, non-porous ceramic lagging often uses small, shallow dimples on the tile surface to generate friction but tends to lose this capability quickly as the dimples wear down.

WHY CHOOSE FORLAG: CL-GREEN?

FORLAG: CL-Green ceramic lagging offers superior friction performance and durability, providing clear advantages over traditional non-porous, dimpled ceramic lagging. Our proprietary technology delivers high static friction coefficients and excellent wear resistance, helping industries maintain smooth and safe operations. Our ECOGRIP series includes porous ceramic tiles, which are ideal for applications where high friction and long-lasting durability are essential. These tiles feature a friction coefficient ranging from μ = 1.0 to 1.5, significantly higher than that of traditional non-porous lagging tiles. This ensures safer, slip-free operation for conveyors, particularly in heavy-duty, high- tension environments.



KEY FEATURES

High Friction Coefficient:
Achieve maximum friction with μ = 1.0 to 1.5 for both non- driven and drive pulleys, ensuring safe and non-slip belt movement.

Long Wear Life:
Our 10+ mm thick porous ceramic tiles maintain high friction performance throughout their wear cycle, offering extended operational life compared to competitors' products.

Reliable and Durable:
Hot-vulcanized porous ceramic tiles provide a sturdy and durable solution, resisting wear and reducing maintenance costs over time.

Protects Conveyor Belts:
The consistent high friction reduces belt slippage and wear, prolonging the life of both the ceramic tiles and conveyor belts.