

Screen Decks





Tega Industries Limited is a name synonymous with pioneering achievement in the mineral beneficiation, mining and bulk solids handling industries world over.

Tega's philosophy is to uphold traditional values through the empowerment of professionals. It's aim is to provide unrivalled technical and economical solutions to complex problems in mining, beneficiation, power, material handling and engineering.

Starting with development and manufacture of specialized wear resistant rubber lining, Tega today offers a range of rubber, polyurethane and ceramic based lining products, which have been incubated in it's R&D center.

Today, the company offers value added consultancy services and solutions in areas of mineral beneficiation and bulk solids handling, which have been tailored to suit specific requirements.

Our vision

To reinforce our current realm of products and services with technologically advanced products and solutions.

To have our products and solutions installed in every mining country in the world and provide support and services at each of our customer locations.

To be the world's most sought after company for providing solutions in wear applications and mineral processing.

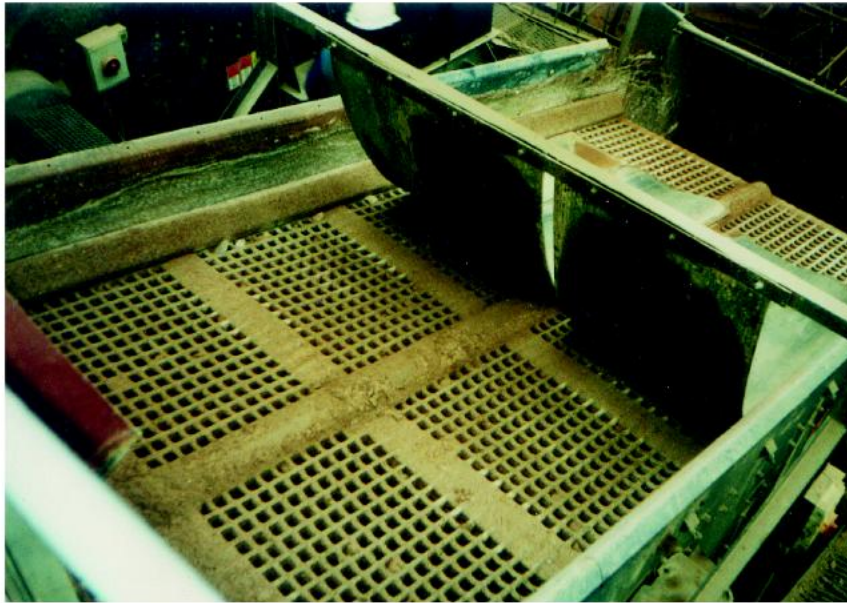
Our Mission

"To distinguish ourselves in providing lasting solutions to the complex problems of material handling, wear and separation of ores found in mining and mineral processing industries".

SCREEN DECKS

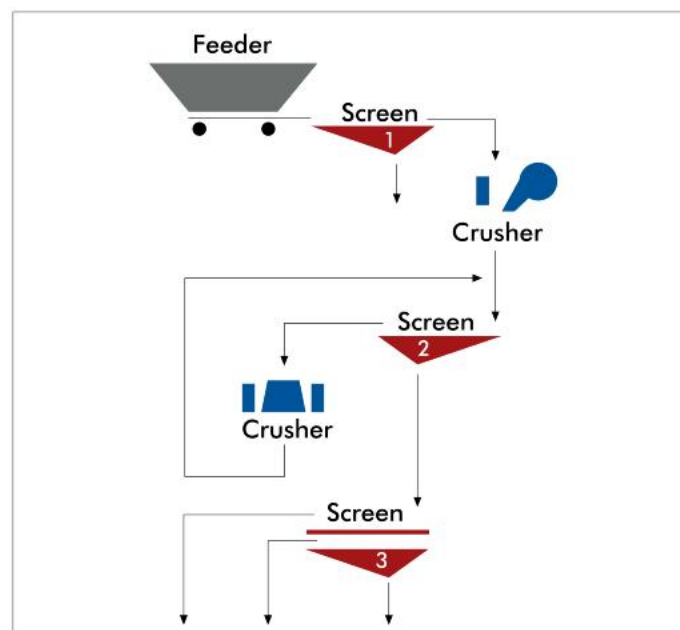
Screening System

Plants Handling cement, aggregate and other material in the mining and mineral processing industry often require the sizing of the material for process requirements.



There is a wide range of purpose of screening in the mineral industry:

- To prevent entry of undersize into crushers there by increasing their capacity & efficiency.
- To prevent oversize material from passing to the next stage in closed circuit, fine crushing & grinding operation.
- To prepare a closely sized feed to certain gravity concentration process.
- To produce a closely sized product as per customer specification.



Screening comprises the physical separation of materials according to their particle size.

In commercial sizing and screening - Two Basic Processes take place :

Stratification :

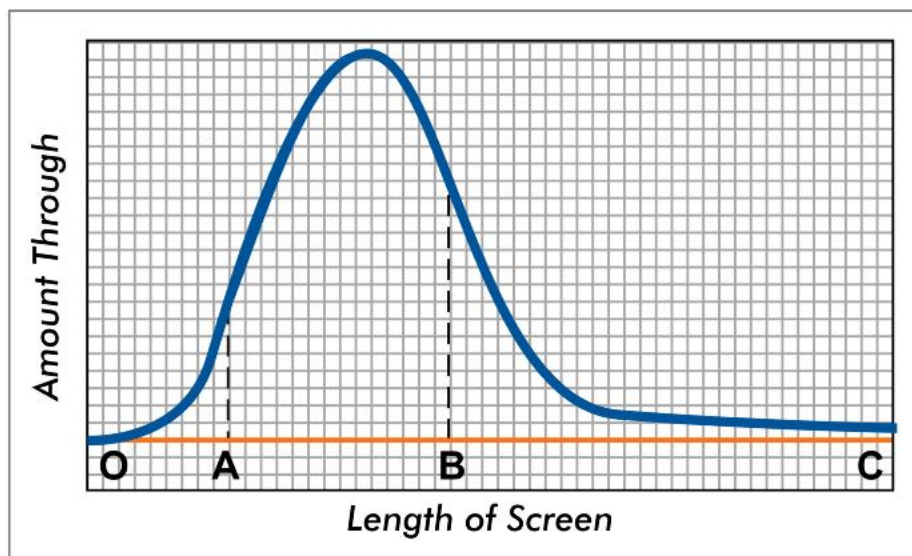
The process where by larger size particles rise to the top of the bed material being shaken or vibrated while the smaller size particles move through the voids and find their way to the bottom of the bed.



Stratification :

Separation

The process of particles presenting themselves to apertures and being rejected if larger than the opening or passed through if smaller.



- O-A: STRATIFICATION
- A-B: SEPARATION (~90%)
- B-C: REST OF SEPARATION

The Factors which affect Screening Process are:

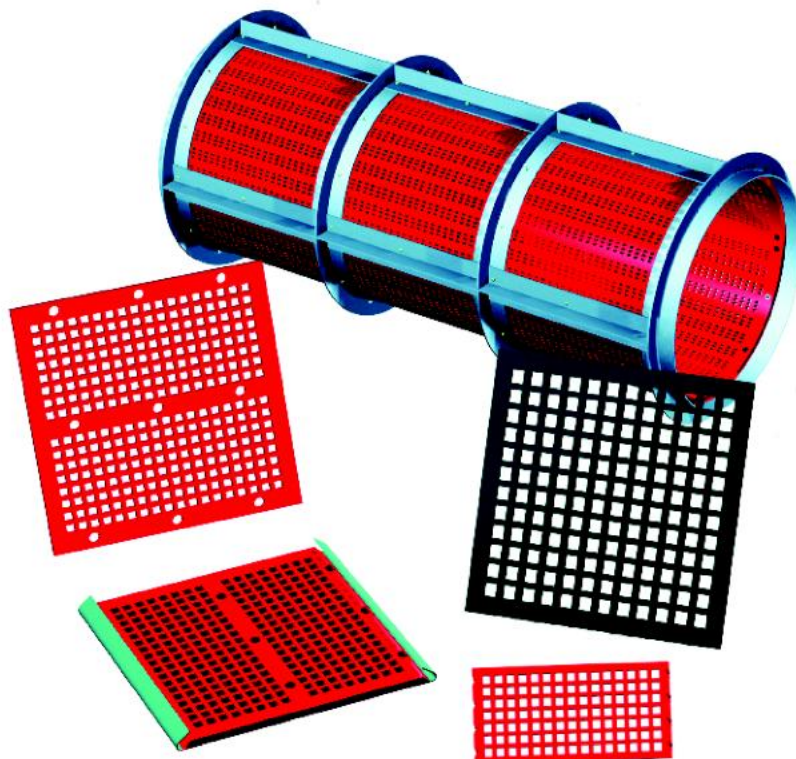
- a) Feed Characteristics like undersize content, feed rate, moisture content etc..
- b) Machine Characteristics like stroke, RPM, Inclination, Type of Motion
- c) Media Factors like aperture size, percentage open area.

Conventionally woven wire mesh or punched steel plates were used as screening media. However since wire mesh screens conventionally used for material sizing, require frequent replacement, the cost of the resultant downtime is a primary concern for management. Offering an **ideal solution** to these problem is **Tega specialized rubber and polyurethane screen decks**.

Tega is today one of the world's leading manufacturers of rubber' polyurethane screen decks. Tega has attained this position because of a combination of unique product design and long experience of both the material and it's application.

Equipped with high operating efficiency, long life and minimum maintenance requirements, Tega screen decks provide a substantial saving for every tonne of material screened. In actual field performance, rubber & polyurethane screen decks have gained wide acceptance internationally during the last thirty five years and have proven to be far more effective than conventional media.

Today, Tega screen decks are used extensively for sreening coal, chalcopyrite, coke, iron ore, limestone and other abrasive ores.



In order to improve the overall economic results of screening - "Simply reducing cost is not only enough, Screening capacity and consistency are just important".

Visual comparison of Tega screen deck with its unique combination of panel material, fixing system, tapered holes, increased open area, rider bars shows the significant advantages to Tega's approach. What is not so apparent, but is nonetheless built into every panel is the thirty five years experience. Over this period Tega has amassed understanding of polymer materials and their application.

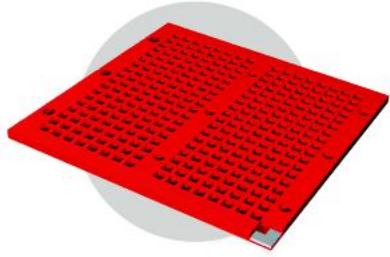
A broad knowledge base is prerequisite for obtaining optimum results, because when it comes to screening there is no standard solutions.

Advantages of Tega Screen Decks

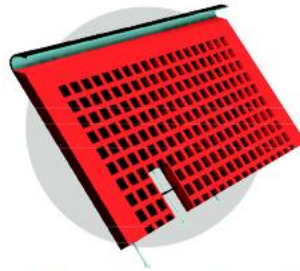
1. Long life Deck	Lower Cost per Tonne Higher Productivity Accurate screening
2. Easy to Fit	Substantial saving in downtime loss
3. High open area and flaring hole design	Gives More throughput
4. Reduction in Noise Level	Improves Working Environment

Tega provides variety of screening decks according to the requirements and needs of the customers.

The following are some of the decks, that Tega makes:



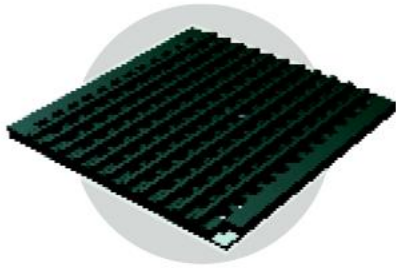
Bolt Down Panel



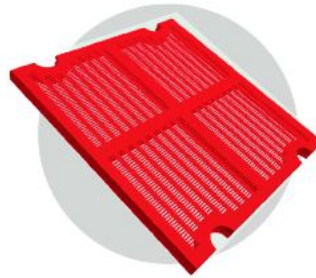
Cross Tension Panel



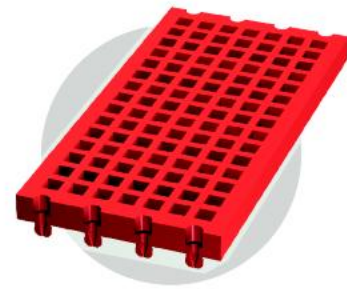
Flip Flo Panel



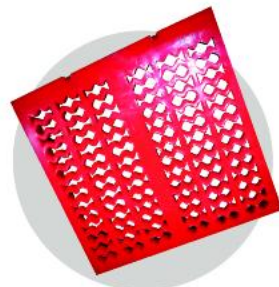
Panel Cord



Dewatering Panel



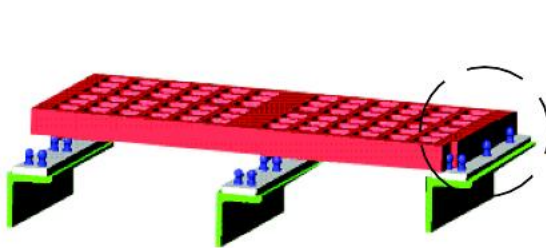
Polysnap Panel



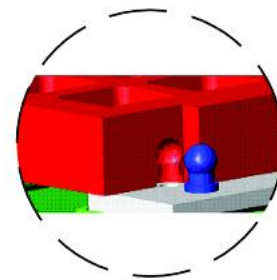
Anticlogging Panel



Trommel



Button Type Panel



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Total Solution

1. Advanced Technology
2. Innovative Thoughts
3. Total Quality Management
4. Timely Deliverance
5. Unbeatable Teamwork
6. Theory in Practice
7. Corporate Transparency
8. Target Achievement
9. Skillful Technical Staff
10. Trans National Presence
11. Tactical Edge
12. Built On Trust
13. IT Enabled Service

“ We are committed to creating value for our customers globally, by bringing them innovative technologies, products and services through our core business ”

Total Solution is an outlook of how we provide products and services to meet customer requirements in order to establish and maintain the customer's all important competitive edge by providing constructive solutions to their problems. The word 'TOTAL', other than being explanatory stand alone, further encompasses various aspects as an acronym of how we provide solutions to our customers:

- T Trust** : You can rely on us
- O Obsessed** : We are engrossed in your work
- T Trained and Tailor-made** : We have all the skills to meet your requirements
- A Accountable** : We answer to you
- L Local** : We are present wherever you are

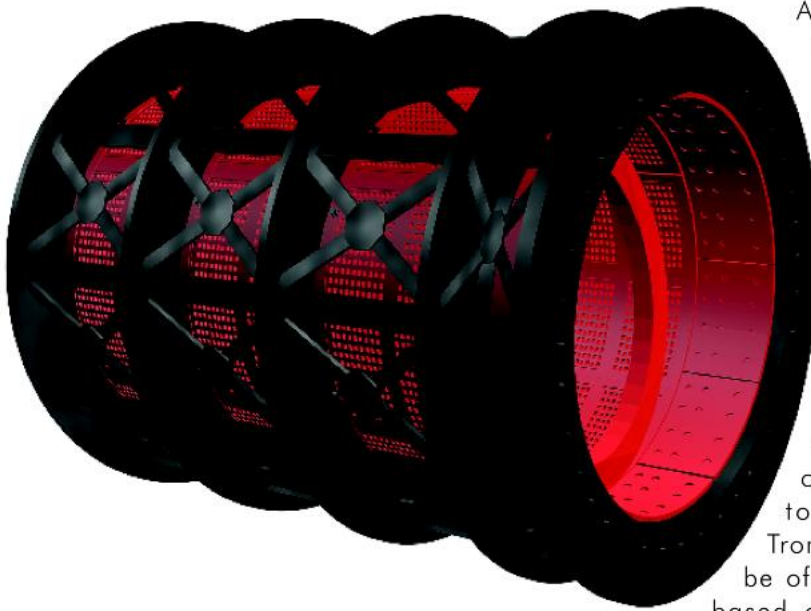
As market forerunners, through our TOTAL Solution approach we provide customers with unmatched products and services by bringing in global management practices and technology with a holistic approach towards excellence. Here at Tega, we put customer needs before everything else. We offer a vast range of integrated and adaptable products and services to empower every aspect of the customer's business requirements.

Confronting problems head-on in collaboration with customers is what we seek to achieve. In order to reach the customer's desired 'solution', we use the most technologically advanced products coupled with skilled support services. To elucidate this concept, we draw a parallel with the amalgamation of solutes and solvents to form a 'solution': Solute (Technologically advanced products) + Solvent (Skilled support services) = 'Solution'

Summing it up, TOTAL Solution is an extension of the 'T' factor, which the Tega family extends to the daily operations of its customers.

Trommel

Tega offers a wide range of Trommel for heavy duty, medium duty and light duty applications along with structure, rubber or polyurethane screen panels, spirals, connecting pieces and end flanges.



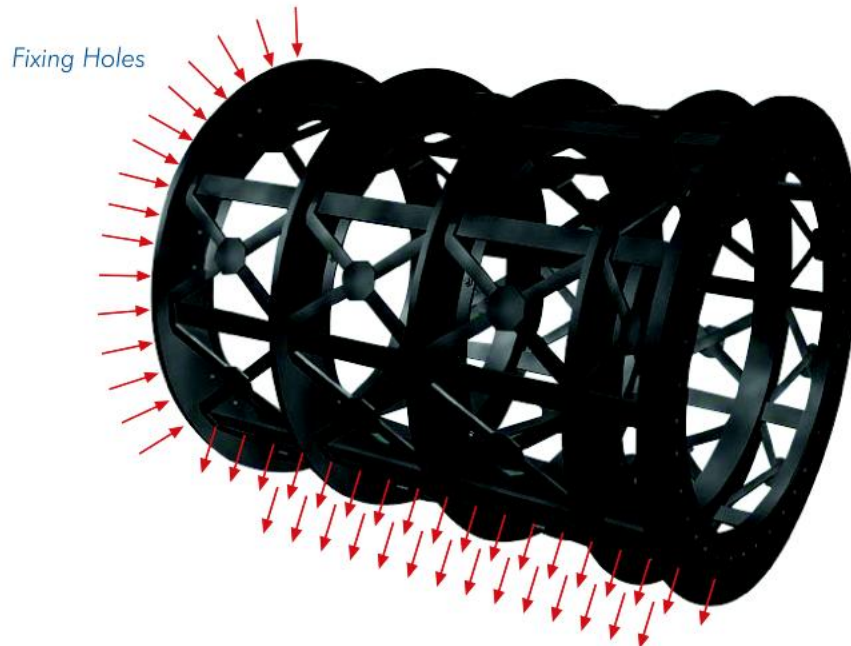
All the Trommels are custom designed optimizing the sizes, capacity, and wear life. The structural parts, type of panels, fixing type, reinforcement are designed and manufactured on the basis of application. The structural design is crosschecked and optimized with Finite Element Analysis. All the structural parts are covered with rubber coating to resist corrosion. The Trommel screen panels may be of rubber or polyurethane based on the application and consists of totally embedded mild steel reinforcement to take care of load as well as to maintain curvature of the panels.

Benefits

- Long life with reduced cost per tonne due to custom designed rubber and polyurethane screen panels with high abrasion resistance.
- Long life of the Trommel structure protected with rubber coating.
- Optimum Trommel size.
- Wide range of apertures along with scrolls of different heights and pitches.
- Easy to fit and remove panels.
- Finite Element Analysis (FEA) of the Trommel Structure ensures the safety of structure considering all the stresses.



The Tega Trommel structures are analyzed under specified loading condition using Finite Element Analysis method. The FEA analysis under the specified structure load checks the allowable stresses in the structure and assures a more rigid and stable structure for the actual operating condition.

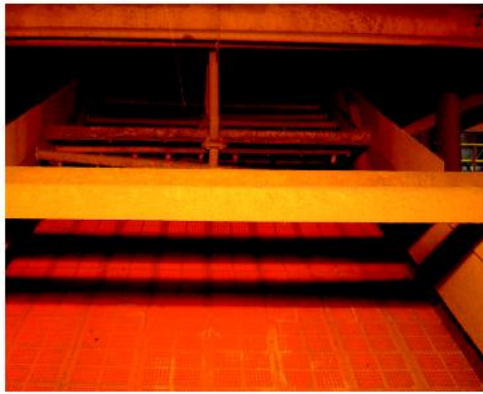


FEA model of the trommel structure and its flanges with loads applied on I-Beams and Constraint applied around the bolt holes.

Features

- Through FEA analysis, the primary combined membrane and bending stress intensities and equivalent Von Mises stresses in all structural members are analysed. This ensures safe design of the Trommel Structure making it extremely reliable and robust in construction.
- The design of the Trommel is done considering the total load and operating conditions with a proper capacity check for the intended duty.
- All steel structures and their weld joints are 100% ultrasonically tested.
- All wetted surfaces are rubber lined.
- To eliminate the stress concentrations and increase the fatigue strength of the structure, it is thermally stress relieved.

Polysnap



This is a modular screening media with unique fixing system that does not require bolting. It is manufactured using specially formulated polyurethane or rubber, and contains at its core, steel reinforcement that is completely encapsulated. The properties of polyurethane and rubber are fully exploited to take care of impact, wear and tear. The steel on the other hand provides the mechanical strength required. The absence of projections ensures the uniform spreading of material across the screen, while the high open area with flaring hole design lends itself to higher throughput.

These Polysnap panels are available in various aperture shapes and sizes according to the applications like **Dewatering Screens, Anti-clogging Screens** etc.

Applications

Secondary, Tertiary & Final Screening

Product Range

Panel Size

610 mm x 300 mm ■ 305 mm x 305 mm

Aperture Size Range

0.5 mm to 80 mm

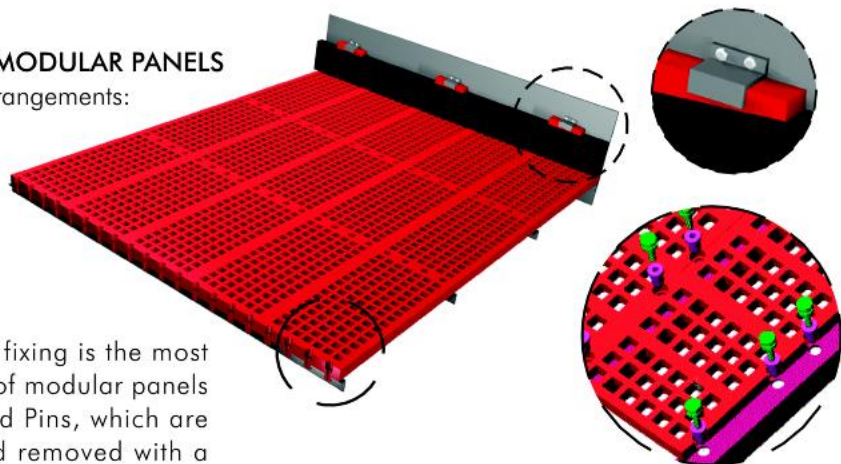
Features	Benefits
Individual Panel Steady and Strong.	Does not sag and gives long life.
Specially formulated polyurethane and rubber takes care of impact and very high sliding abrasion.	Long life, reduces cost per tonne.
High Open Area and Flaring Hole Design.	Higher throughput.
Easily fitted or removed.	Substantial saving in downtime.

These **POLYSNAP TEGA MODULAR PANELS** have two types of fixing arrangements:

- Pin and Sleeve type
- Button type

Pin and Sleeve type:

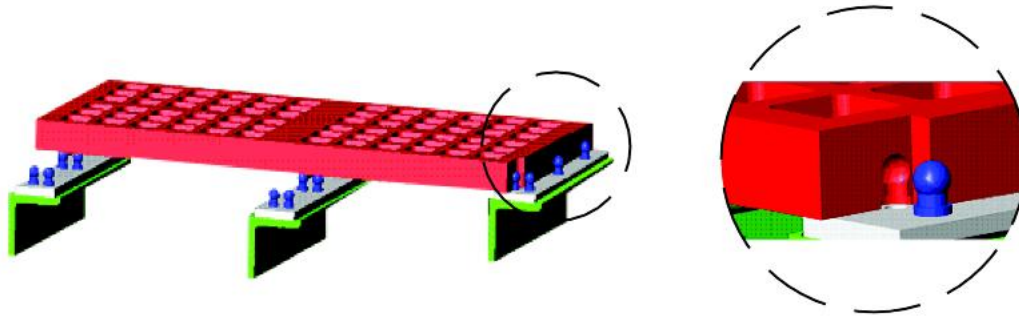
The Pin and Sleeve type fixing is the most conventional type fixing of modular panels consisting of Sleeves and Pins, which are fixed by hammering and removed with a screwdriver.



Pin and Sleeve Type Fixing

Button type:

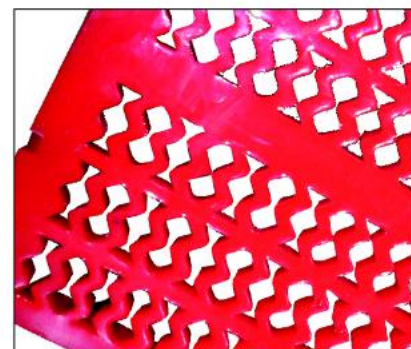
This patented design (PAT No.- 231453) of TEGA for modular panels is the latest and most widely accepted in the market as it removes all the disadvantages of Pin & Sleeve type design of fixing the panels.



Features	Benefits
No changing of pins & sleeves required. During application, the button remains fully encapsulated.	Spares cost goes down, as no spares cost for pins & sleeves.
Easy to fit & remove as Tega provides initially the button plate, which can be fixed to frame easily.	Downtime loss is reduced.
The button plate can be adjusted slightly to ease fitment, which is not possible in pin & sleeve design.	No chances of dislodgement of panels.
30 % more gripping power than pin & sleeve design.	Less chances of dislodgement of panels.
The edge panels below side fixing bars are also fixed, reducing chances of side panel dislodgement.	More Life of the Screen.
For pin & sleeve design - The fixing holes of pin & sleeve design gets enlarged causing the pin & sleeve to come out.	No holes in fixing channels, so no chances of sleeve coming out.
For pin & sleeve design, if the holes of channel get enlarged - In order to refix the panel, full new channels with drilled holes will be required.	Not required for Pin button type design, therefore spares cost reduced.

Anti Clogging Panels:

Tega anti clogging Screen decks are used for applications where there are severe clogging problems. The specially designed aperture induces secondary vibrations in deck, thus successfully solving blinding problem experienced when screening dry, damp or near size particles. They have high open area and are interchangeable like all Polysnap panels.

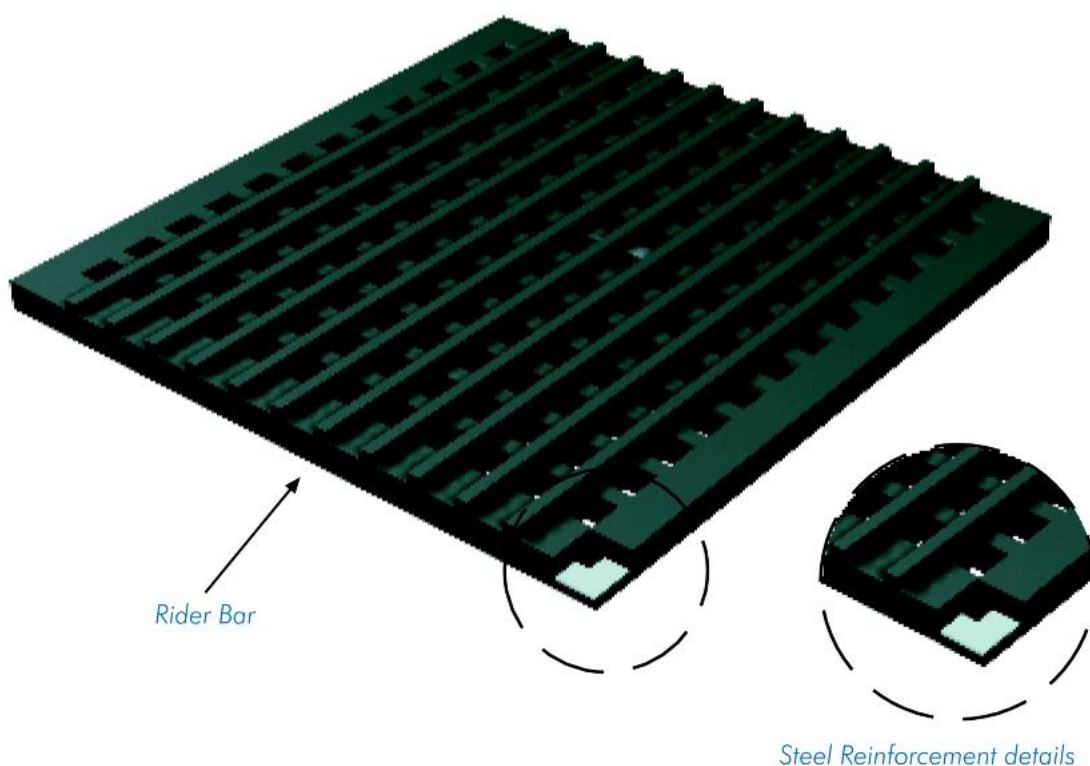


Panel Cord



Tega panel cord is the trade name for self-supporting screening elements for coarse and medium screening applications. The Tega panel cord is manufactured from steel reinforced specialized wear resistant rubber using a high pressure moulding system that moulds rubber with steel. The steel is completely encapsulated. This unique design fully exploits the properties of both rubber and steel. Due to its elastic and wear resistant properties, the rubber absorbs the impact and resists abrasion and tearing, while the steel provides the mechanical strength that reinforces the self-supporting design of the panel.

The ability of rubber to reduce wear and maintenance is well known. In comparison with conventional screens of steel construction, rubber screen panel often lasts 6 -10 times or even more depending on the type of screening being carried out. Visual comparison of Tega panel to any other panel reveals several significant advantages to Tega's approach. The tapered holes reduce incidence of blockage, the ribbed surface with rider bars not only increase life, but also help in stratification thereby increasing screening efficiency.



Rider Bar

Steel Reinforcement details

The flexible rubber deck creates different amplitudes across the width of the screen. The flexible attachment system maintains rubber to rubber contact. Together they ensure that the charge stays 'live' and the full screening area is effectively utilised.

Therefore the overall efficiency of the screen deck is higher although calculated open area may be lower. The bucket up frame is appropriately designed to support the decks and has rubber strips to prevent undercutting.

Applications

Scalping, Primary & Medium Duty

Product Range

Panel Size

1800 mm width (Max.)
1200 mm length (Max.)

Aperture Size Range

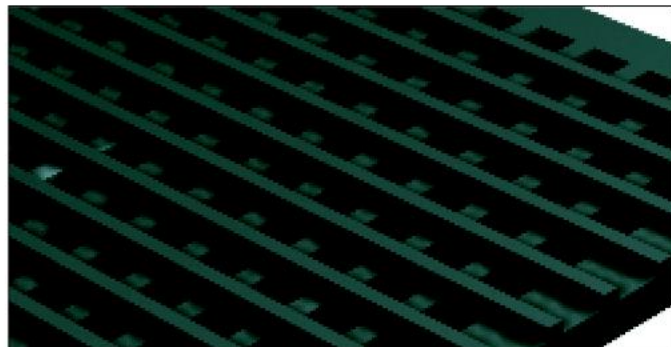
6 mm to 150 mm

Features	Benefits
Superior rubber compound.	Long life, reduces cost per tonne.
Rider/Skid bar.	Gives extra life and improves screening.
Steel Reinforced.	Self - Supporting.
Flaring Moulded Holes.	Increased screening efficiency.

Rubber Rider Bar Panel Cord:

Tega panel cord is provided with rubber rider bars as shown in the figure.

These rider bars increase the life of the deck and also help in stratification thereby increasing the screening efficiency.



PM Rider Bar Panel Cord:

Tega has introduced a new patented design (Patent no. 203/KOL/2006) of screen panels with PM rider bars which increases the life of the panels and makes the screening process more effective and efficient. These panels, apart from improved stratification also provide enhanced life because of the highly wear resistant PM material.

Bolt Down | Cross Tensioned | Flip Flo Screen Panels

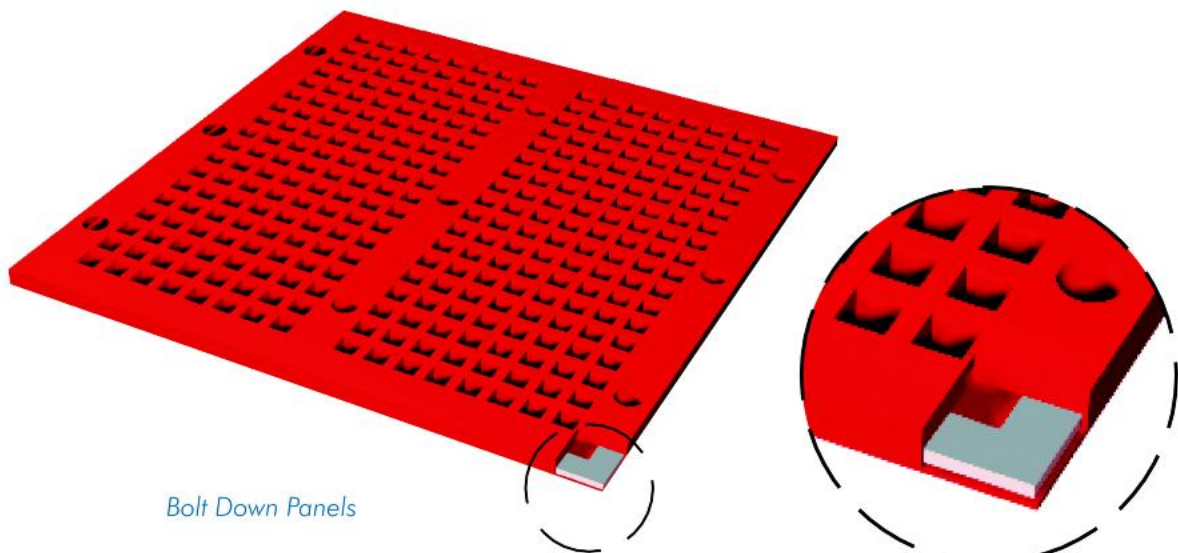
Tega manufactures flat bolt down, cross tension type and flip flo screen panels in both polyurethane and rubber. The panels are designed to fit existing bucket up frames and fixing system and therefore do not require any changes in frame. They are available in various shapes and sizes of apertures. Tega screen panels provide the highest open area compared to any other polyurethane/rubber screening system. Tega cross-tensioned/bolt down screen panel can be manufactured of any size to suit existing screen width.

Product Range
Panel Size 2400 mm width (Max.) 1200 mm length (Max.)
Aperture Size Range 4 mm to 60 mm

Feature	Benefit
Steel Reinforced Bolt down panels.	Replaces existing panels without any changes in frame.

Flat Bolt Down Panels:

The panels are either one single unit across the width or held down by middle fixing bars of rubber/polyurethane with counter bore hole at the center, and at the edges, side fixing bars of rubber/polyurethane hold the panel down. The middle fixing and side fixing bars are internally reinforced with steel to take the clamping forces.



Bolt Down Panels

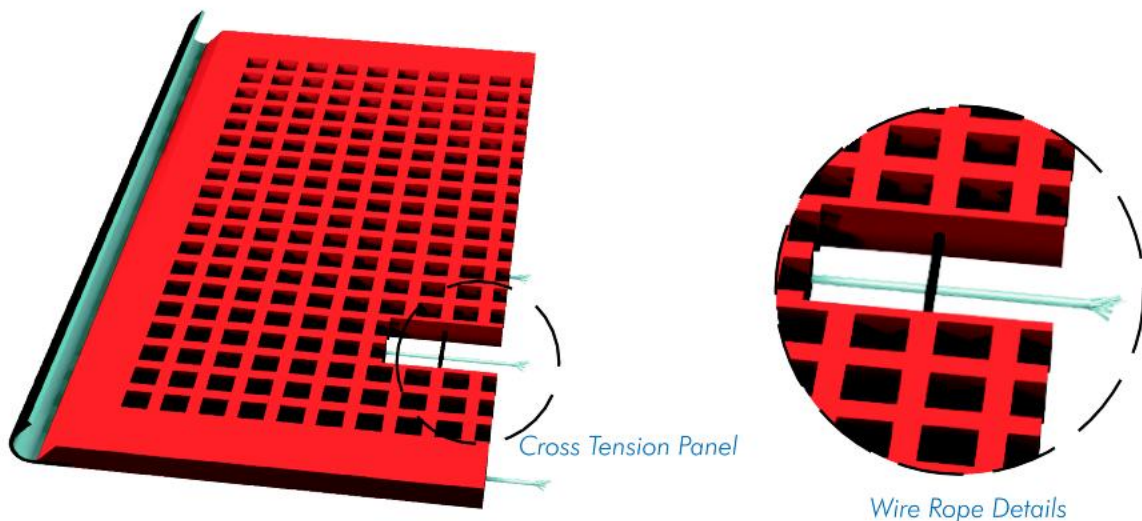
Steel Reinforcement details

Cambered Cross Tension Panel:

The screen panels are provided with metallic hooks at the edges for fixing of the panels. The panels are flexible and internally reinforced with steel wire ropes. Middle fixing bars are provided at the center depending on the width of the screen machine. Bucker up strips, available in continuous length for different thickness of longitudinal flats, are recommended over all bucker up bars to prevent undercutting of panels.

Product Range
<p>Panel Size</p> <p>2400 mm width (Max.) 1200 mm length (Max.)</p>

Feature	Benefit
Tension type panels provided with flexible wire rope.	High flexibility results in better efficiency.



Flip Flo Panels:

In the applications of the highly sticky ores, Tega provides flip flo panels. These panels have good strength with high flexibility and hence give better life with improved screening efficiency.



