NRC INDUSTRIES LTD.

AN ISO 9001:2015 & 14001:2015 COMPANY
NABL ACCREDITED

"When you want to insulate your plant and machinery and human lives from Fire and Smoke , think of NRC PVG Belts"

PVG SOLID WOVEN CONVEYOR BELTING

NRC Industries Limited

PVG Conveyor Belting, the proven high-performance and reliable mode of material handling, are becoming increasingly popular. We offer innovative solutions to specific material handing problems using PVG Conveyor belts.

NRC Industries Limited has the certifications of ISO 9001:2015 for quality management systems, ISO 14001-2015 for environment management systems and certificate of accreditation by NABL (ISO 17025-2017) for finished product testing laboratory.

Introduction of NRC PVG Fire Resistant Solid Woven Conveyor Belting

PVG stands for Poly Vinyl Gummy

PVG' is the term generally used for PVC impregnated solid woven belting fitted with synthetic rubber covers

'FRSR' is the term – meaning Fire Resistant Synthetic Rubber

WHY USE PVG CONVEYOR BELT?

PVG belt performs a double role or functions as both FR PVC belting as well as FR rubber beltings

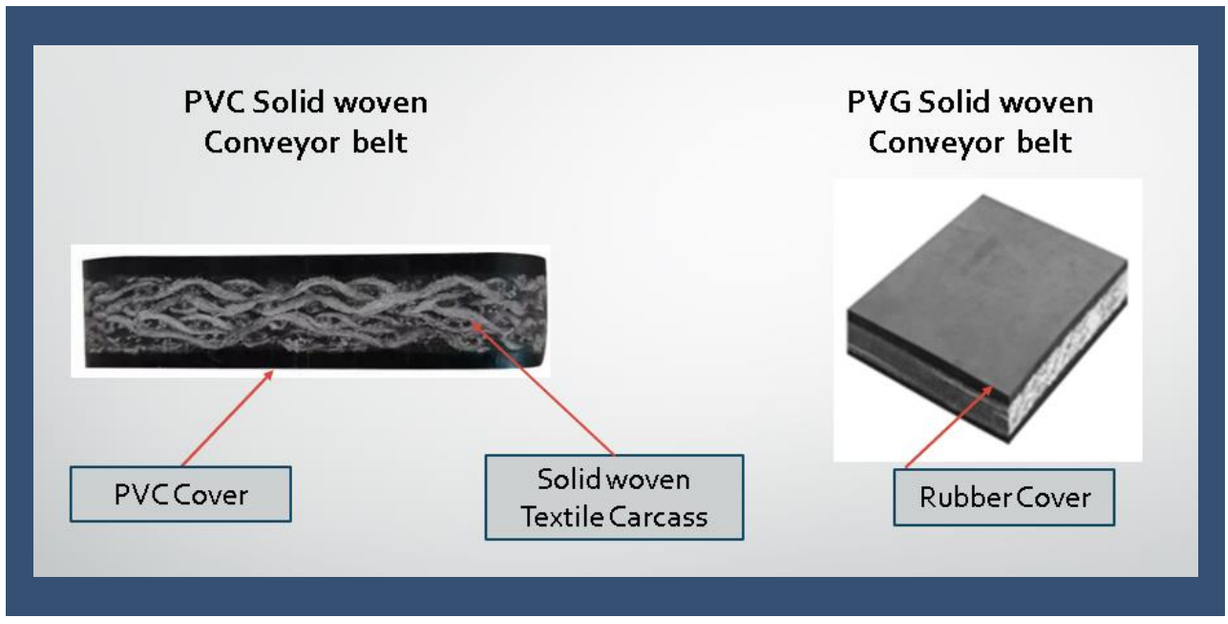
Following are the properties of PVG belting as PVC and Rubber belting properties, all these properties are advantages to PVG Conveyor beltings :

PVC CONVEYOR BELTING	PVG CONVEYOR BELTING
Excellent fastener holding capacity	High elasticity
No ply separation since solid woven	Excellent grip
Excellent Fire-resistant property	High Abrasion resistance
Excellent Trough-ability	Good impact resistance
Chemical resistance	Higher Cover thickness possible
High strength	Various Cover grades possible
High Durability	Vulcanized splice joints possible

PVG Belt Specification and Recommented Drum Diameters:

Table.1

Belt designation lbs/in	Warp strength N/mm	Weft strength N/mm	Minimum Re-commented Drum diameter mm	
			High tension	Low tension
3500	630	275	400	315
4000	710	300	400	355
4500	800	300	500	355
5000	875	300	500	355
6000	1000	350	630	400
6500	1140	350	630	400
7000	1250	350	750	450
8000	1400	350	750	450
9000	1600	425	800	600
10000	1800	425	800	600
--------	2000	425	1000	750
12000	2100	425	1000	750
--------	2500	425	1000	750
15000	2625	425	1000	800



NRC Quality Assurance

Quality Assurance In accordance with the requirements of our major customers, the planning, design, manufacture and quality control procedures have been assessed to ISO 9001:2015, the International Standard for assessment of a manufacturer's quality system.

The system approved under the above standard has been accepted by the USA Mines Safety and Health Commission. A similar assessment of Other International Standards.

Quality Testing

All PVG belting is produced within our Quality Management System which is compliant with ISO 9001. As part of this system, the quality of all belt is verified to the specifications, prior to despatch to customers. Following are the testing will include:

1. Dimensional measurements
2. Warp and weft tensile strengths
3. Tear strength
4. Elongation
5. Cover adhesion
6. Safety tests (laboratory flame, Drum friction and electrical resistance)
7. Abrasion resistance
8. Transverse stability

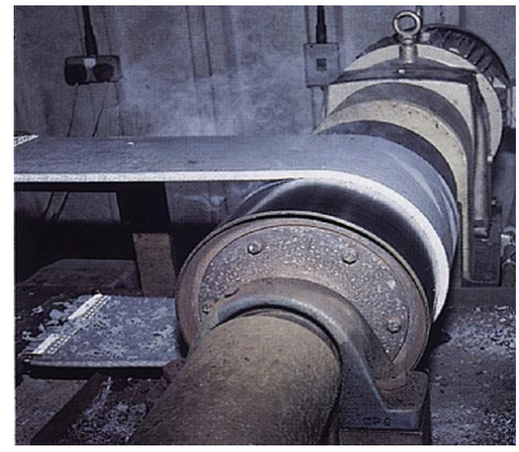
Safety Testing

NRC Fire Safety testing approach is that the belt should never be cause for a fire in the mines. The fire resistance specifications vary from country to country, belts can be formulated to meet any fire performance according to the specifications of that particular country.

The tests carried out on conveyor belts to assess their compliance with fire safety standards are associated with four particular hazards.

1. Drum Friction Test

The danger associated with a stalled belt and a driven rotating drum or pulley resulting in frictional heat build up. A test piece of conveyor belt, suitably mounted and tensioned, is wrapped half way around a rotating steel drum, simulating a stalled belt. The test is conducted in still air and/or in moving air to stimulate the actual mine condition. This test has probably been the major single contributor to mine safety in respect to conveyor fire prevention.

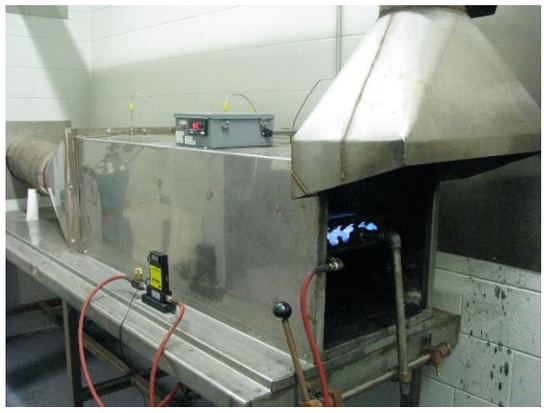


2. Laboratory Flame Test

The possibility of a conveyor belt fire with a relatively small ignition source. This hazard is usually assessed by the application of a small “Bunsen” type flame to a belt sample and observation of the effect. The time taken for all flame and/or glow to self-extinguish is noted.

3. Gallery Fire Test

The possibility of a belt, ignited from a larger ignition source, spreading the fire to other areas (often referred to as fire propagation). This hazard can only be assessed by a gallery fire test.

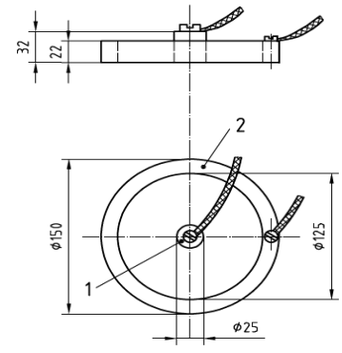


MSHA FIRE TEST FOR US

MID-SCALE FIRE TEST FOR EUROPE

4. Electrical Resistance Test

The possible discharge of static electrical charge on moving conveyors. Electrical resistance is determined by passing a current of specified voltage between electrodes placed on the surface of the belt. The internationally recognised acceptance criteria for electrical conductivity is a maximum resistance of 3.0 × 108 Ohms (300M Ohms).



TECHNICAL INFORMATION

Belt designation

Belts can be produced to various tensile specifications, using polyester base warp yarn. Some markets still prefer to specify belt types based on tensile strength expressed in lbs/in width, whilst others opt for the preferred ISO nomenclature expressed in N/mm. The table no.1 shows typical figures for minimum warp and weft strengths.

Belt width

Any width up to 1600mm can be manufactured. Whilst we recommend customers to follow the ISO range of preferred widths, non-standard widths can be supplied. Slit-edge belting is also available upon request.

Belt thickness

When considering cover thickness, please be aware of the high textile content of solid woven and the properties afforded by the increased carcass bulk compared to rubber plied belting. Consequently, thinner covers may generally be chosen than would normally be associated with an equivalent plied product, the enhanced textile density of a solid woven carcass providing the necessary load support and resistance to impact.

Drum diameters

The drum diameters quoted are the minimum generally recommended. Given specific information regarding wrap configurations, tensions, belt speeds and jointing methods, it may be possible to recommend smaller drums

Operating factor or safety

With good quality mechanical fasteners or vulcanised joints a factor of safety of 10:1 is generally acceptable. However we would be pleased to confirm the recommended belt construction and acceptable safety factor for any specific application on receipt of the necessary conveyor details.

Operating temperature range

Above 90°C PVC softens and the belt properties change. PVC belt is therefore not recommended for conveying materials above this temperature. Standard belts can be used in cold climates down to -10°C. Where applicable, cold weather details should be supplied to ensure that belting with suitable coefficient of friction and flexibility characteristics is specified.

Belt stretch

The Carcass design and manufacturing process of solid woven belt allows both permanent and elastic stretch to be kept to a minimum.

Fitted fasteners

Mechanical fasteners to customer requirements can be pre-fitted in the factory. Please advise when ordering the belt.

Joining of PVG belts

Hot Vulcanised Finger Splice

Portable vulcanising presses are used for this process, in conjunction with a variety of polymeric

jointing materials developed for maximum joint efficiency. This type of splice enables good qualityjoints to be made with strengths approaching that of the parent belt. Hot vulcanising offers certain advantages, like the highest joint strength, tear strength, ploughs, deflectors and minimal impact over pulleys and idlers.

Mechanical Fasteners

The solid woven carcass, combined with the superior PVC impregnation gives excellent fastener holding properties. A wide range of fasteners including Mato, Goro, Titan and Flexco are suitable for use with solid woven conveyor belting.

Inspection, Packing, and Storage

1. Inspection - Before shipping the belts are 100% inspected. Double coils and Single Coils can be supplied. If the customer preferred mechanical fasteners can be fitted in factory itself.

2. Packing – Belts are packed in accordance with the customers requirement

3. Storage of Conveyor Belting - should be stored coiled with the central axis horizontal. Conveyor belting should be stored and handled in accordance with standards. The storage temperature should be below 40° C.

Notes

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