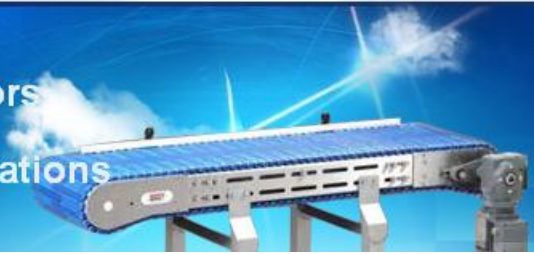




Conveyors Elevators Belt Fasteners Technical Specifications



Conveyor BELT FASTENER Technical Specifications HIC Manufactured UNIVERSAL Brand

Universal belt conveyor fasteners ensures maximizing conveyors uptime, conveyor safety, and belting productivity, in a way, steel plates hardened & tempered thicker types are used, clips are zinc coated, nut bolts are painted auto black finish, longer life on higher tension belts with mechanical fastener ratings upto 350 KN/M (=2,000 P.I.W.)

Industrial Conveyor Belting MECHANICAL FASTENERS Product Specification



- Mining & Aggregate Industry Conveyors Hawk Type Conveyor Belt Fasteners in Size 1, 1.5, 2, 2.5 & 3



- Rubber & Leather Belts Drive Grip-well Belt Fastener in Size 47 mm to 147 mm Length



- Lap & Saddle Back Belt Jointing Oval Type Belt Fastener in Size 1/4, 5/16, 3/8



- Food-grain Industry Elevators
Fang Type Belt Elevator Bolt Bevelled Con c ertic Head In Size Metric & UNC Thread.



- Steel Buckets With Recessed Hole Euro Bolt Hexagon Nut Washer
As per DIN 15237 in size M10 x 35, M10 x 40, M10 x 90



Contact For Quote:

HIC INTERNATIONAL CO -Conveyor Belts Fasteners & Elevator Bolts

D-136, Shankar Road, New Delhi - 110060, India

Phone: 91-11-6547 2400, 2874 5120

Fax: 91-11-2874 2791

E-mail : universal@hic-india.com; belts@universaldelhi.org

Website : <http://www.rubber-steel-industrial-products.com>

Key personnel : Mr. Anil Gupta, President



Conveyors Elevators Belt Fasteners Technical Specifications



- Railways Train Lighting Belting Drive
Walker Type Dynamo Belt Fastener As per RDSO Drg. 3714 (ALT -1)



- Packing & Food Conveyors Alligator Type Steel Belt Lacing
In size 15, 20, 25, 27, 35, 45, 55, 65 upto 288 mm strip length

Belt Fastener Selection Quick Guide				
Fastener Size	Rubber Belt Thickness Range (mm)	For Belts with allowable working tension of fasteners ratings upto		Pulley Diameter Minimum Suggested (mm)
		(kN / m)	(.I.W.)	
1	5 to 11	30	150	300
1.5	11 to 17	50	300	450
2	14 to 21	75	440	750
2.5	19 to 25	75	450	1050
3	24 & above	100	560	1200

* Fastener sets requirements are approximately upto 5% roughly of belt width eg. 600mm wide belting will require upto 30 nos. sets to make a single joint.

Belt Fastener Information To Be Supplied With Enquiry or Order

1. Belt Fastener Type, i.e. whether hawk type & so on.
2. Belt Size & Thickness
3. Belt Service Application
4. Quantity in numbers

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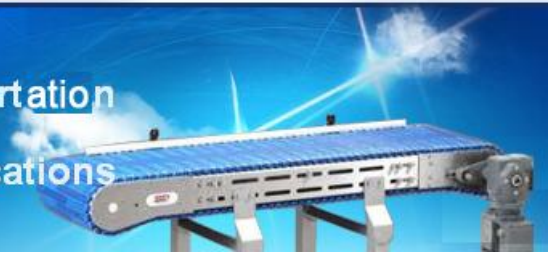
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Materials Transportation Conveyor Belts Technical Specifications



Conveyor Belts Product Specification HIC Manufactured UNIVERSAL Brand

Universal Conveyor Belts ensures **safe transportation of lifting & unloading of materials**, in a way, the nylon or polyester **textile carcass** fabric plies are bonded with **synthetic rubber** compound, belting rubber **covers** are made of anti-abrasive, high tensile strength quality **M-24** or **N** grade suitable for carrying lumps or fine dust at ambient temperature, rubber grade **Heat Resistant**, SHR, Superior HR for hot materials transportation up to **200 degree C**, belt rubber grade **Hygienic** for sugar, tea, vegetables, food processing, belts cover quality **Fire Resistant** for use in transporting lignite coal, sulphur, nuclear power stations and supersedes IS:1891, BS: 490, DIN: 22102, ISO 4195 quality standards.

Materials Transportation hic Conveyor Belts

- **Nylon** conveyor belts **M - N** grade rubber **3- 8 ply, 3 x 1.5 mm** thick covers min. & above up to 2400 mm W
- Polyester textile **EP** Fabric Ply M- N grade conveyor belts up to 20mm thick
- **Hygienic Food** grade Nylon **3, 4 ply** conveyor belting up to 1200 mm W
- **Heat Resistant** conveyor belts with **4 x 2 mm** thick rubber covers min. & above of HR 120 C
- **Fire Resistant** conveyor belts with **3 x 3 mm** thick rubber covers min. & above
- **Rough Top** conveyor belts 3 ply with **3 mm ruff** min. thick on top up to 1000 mm W
- **Endless** size conveyor belts up to 90 mtrs max. single length
- **Elevator** rubber belts in 2 equal roll lengths
- **PVC Food** grade conveyor belts up to 2000 mm W
- **Rough Grip, Ribbed** PVC conveyor belts
- **Oil Resistant PVC** conveyor belts up to 3000 mm W
- **Conveyor Belt Fasteners**



Rubber Conveyor
Belting

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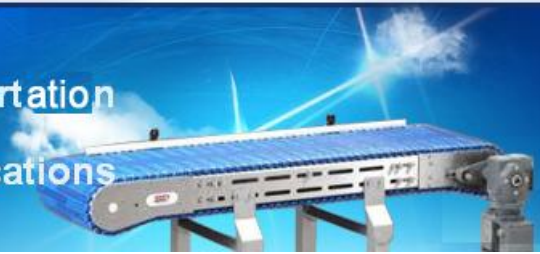
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Materials Transportation Conveyor Belts Technical Specifications



Conveyor Belt Technical Specifications COVER GRADES HIC Manufactured UNIVERSAL Brand

Rubber Belt Grade	Conforming To Standards	Applications			Belt Physical Properties		
		Belt Characteristic	Industrial Materials Handling Reference	Material Temperature Range	Av. Tensile Strength Belt (Min) Kg/Cm	Av. Elongation (Min.)%	Rubber Abrasion (Max.) mm
Belt Conveyor Mine, Belt Coal Conveyor, Rubber Belt, Limestone Quarry Conveyor					GENERAL PURPOSE		
M-24 (‘M’, ‘A’)	IS: 1891 (Part I) BS: 490(Part I)	High tensile strength and superior in abrasion, cut and gauge resistance. Recommended for transporting highly abrasive materials.	Metallic Ore, Coke stone, Copper Ore Limestone, Broken glass, etc.	(-)45°C to + 60°C	245	450	150
Fly Ash Conveyor Belt, Husk Conveyor Belt, Shot Blaster Belt				GENERAL PURPOSE			
N-17 (N or S)	IS: 1891 (Part I) BS: 490 (Part I)	Recommended for transporting moderately abrasive and non-abrasive materials.	Coal, Wood chips, Fine ores, Clay Unground, Cement etc.	(-)35°C to + 60°C	175	400	200
Synthetic Rubber Conveyor Belt, Urea Handling Belt				SPECIAL PURPOSE			
H-TEX	Mfd. to our Universal Standards	Moderate tensile strength and excellent in abrasion resistance exclusively manufactured by us.	Copper ore, Fertilizers, Sand, etc.	(-)45°C to + 80°C	190	400	100
Hot Belt, Clinker Handling Belt, Feeder Belting				HEAT RESISTANT			
Universal BLAZE (HR)	IS: 1891 (Part I) T1	Super in heat and abrasion resistant.	Cement, Chemicals, Soda ash, etc.	+ 65°C to + 120°C	130	350	250
Universal BETAPLUS (Super HR)	IS: 1891 (Part II) T2	Heat and abrasion resistant.	Cement clinker, Foundry Sand, Sintered ore, etc.	+ 65°C to + 150°C	130	350	250
Universal SUN (Superior HR)	Mfd. to our Universal Standards	Surface of rubber cover hardens by heat and shallow cracks occasionally. * Also, Ultra Heat Resistant up to 200C manufactured with minimum 7 x 3 mm cover thickness recommended	Iron pellet, Hot coke, Burnt limestone, etc.	+ 65°C to + 180°C	110	350	250
Conveyor Belting				OIL RESISTANT			
OR	IS: 1891 (Part III)	Excellent resistance to mineral, vegetable and animal oils.	Materials with crude petroleum Tar sand, Oil sand, etc.	(-)25°C to + 60°C	125	250	350

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Materials Transportation Conveyor Belts Technical Specifications



Food Quality Rubber Belt, CTC Tea Processing Machine Belt White Color					HYGIENIC		
HYGIENIC	IS: 1891 (Part IV)	Non-toxic, tasteless and odourless. Recommended for handling foodstuffs.	Tea, Coffee, Pharmaceuticals, etc.	(-)20°C to + 60°C	100	350	350
Industrial Conveyor, Power Station Rubber Belt, Coking Machinery Belt					FIRE RESISTANT		
FR	ISO 284	Fire resistance and anti static.	Coal, Coke, Sulphur, etc.	(-)45°C to + 60°C	110	400	200

(Remarks)* Testing method of abrasion as per DIN22101

#sub to (-20% tol.)

Special cover grades have also been developed depending upon service conditions, viz., Chemical Resistant & HTTR rubber grade.

** Weight of rubber cover (approx.) = 0.034 kg / 25 mm width / per 1 mm thick / per meter length.

*** Manufactured up to **2400 mm** widths

#**Weight** of nylon conveyor belt of **650 mm** wide x 315/3 x 3/1.5 mm covers of 100 mtr. long = **600 kgs**
approx. @ Conveyor carrying capacity of 800 mm wide belt is approx 140 tons/hour at belt speed of 45 mtr / min.

Also, manufacture of Oil Resistant PVC coated conveyor belts, confectionery use PU belting, sugar transportation white food grade PVC conveyor belting, PVC rough top belts.



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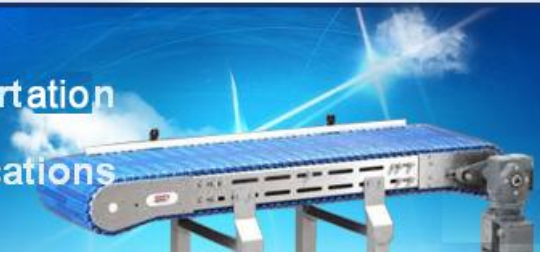
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Materials Transportation Conveyor Belts Technical Specifications



Conveyor Belt NYLON Fabric (NN) Product Specification

Belt Designation		Maximum Allowable Working Tension KN/M	Nominal Carcass Thickness (mm)	Nominal Carcass Weight (Kg/Cm) width/mtr.	Maximum Belt Width (mm) For Adequate Load Support (Material Bulk Density) (Kg./m)			Maximum Belt Width (mm) For Adequate Througling (Angle of picking idlers)		
Type	Rating				upto 800	upto 1500	upto 2500	20°	35°	45°
GENERAL DUTY (TYPE A)	200/2	20	1.9	0.019	650	500	400	300	300	450
	250/2	25	2.1	0.020	650	600	450	350	400	450
	250/3	28	2.9	0.021	700	650	500	350	400	450
	315/2	31	2.2	0.023	800	700	600	350	400	450
	315/3	31	3.0	0.028	1000	800	650	400	450	500
	400/3	40	3.2	0.033	1050	900	650	500	500	500
	400/4	44	3.9	0.038	1050	900	650	500	500	500
	500/3	50	3.2	0.033	1200	900	800	500	500	500
	630/3	63	3.4	0.035	1200	1000	800	500	500	500
HEAVY DUTY (TYPE B)	200/2	20	2.4	0.025	750	600	450	300	300	450
	250/2	25	2.6	0.030	900	650	500	450	450	500
	250/3	28	3.6	0.035	1000	900	650	450	450	500
	315/3	31	3.7	0.039	1200	1000	800	450	500	500
	400/3	40	3.9	0.042	1200	1000	800	500	500	600
	400/4	44	4.8	0.048	1300	1100	850	500	500	600
	500/3	50	4.0	0.045	1400	1200	900	500	500	600
	500/4	50	5.0	0.046	1400	1200	900	500	500	650
	630/3	63	4.2	0.047	1400	1200	1000	500	500	650
	630/4	70	5.4	0.052	1800	1400	1200	500	650	800
	800/4	90	5.6	0.054	1800	1600	1400	650	800	900
	800/5	100	6.7	0.058	1800	1600	1400	650	800	900
	1000/4	110	6.0	0.065	1800	1600	1400	650	800	900
	1000/5	120	7.0	0.070	1800	1600	1400	700	850	1000
	1250/4	140	6.4	0.070	1800	1600	1400	750	900	1000
1250/5	140	7.5	0.076	1800	1600	1400	800	1000	1000	



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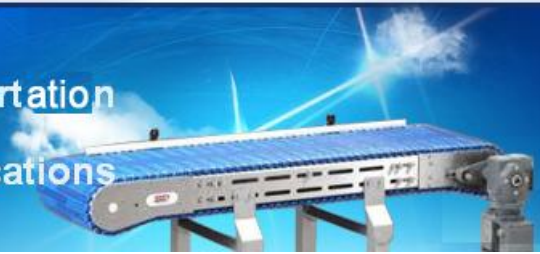
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Materials Transportation Conveyor Belts Technical Specifications



Conveyor Belt NYLON Fabric (NN) Product Specification

Belt Designation		Maximum Allowable Working Tension KN/M	Nominal Carcass Thickness (mm)	Nominal Carcass Weight (Kg/Cm) width/mtr.	Maximum Belt Width (mm) For Adequate Load Support (Material Bulk Density) (Kg./m)			Maximum Belt Width (mm) For Adequate Througling (Angle of picking idlers)		
Type	Rating				upto 800	upto 1500	upto 2500	20°	35°	45°
Extra HEAVY DUTY (TYPE C)	400/3	40	4.3	0.044	1200	1000	750	500	500	600
	500/3	50	4.4	0.048	1300	1100	750	500	500	600
	500/4	55	5.5	0.061	1400	1200	800	500	500	650
	630/3	63	4.6	0.052	1400	1200	850	500	500	650
	630/4	70	5.9	0.067	1400	1200	850	500	500	650
	800/4	90	6.2	0.070	1600	1400	1000	500	500	650
	800/5	100	7.3	0.081	1650	1400	1100	500	500	650
	1000/4	110	6.6	0.074	1800	1400	1200	500	65	800
	1000/5	120	7.7	0.085	1800	1500	1300	500	650	800
	1250/4	140	7.0	0.087	1800	1600	1400	650	650	800
	1250/5	140	8.3	0.092	1800	1800	1600	650	800	900
	1400/5	155	9.0	0.092	2000	1800	1800	650	800	900
	1600/5	180	9.4	0.097	2000	2000	1800	800	900	1000
1800/6	190	10.6	0.120	2000	2000	2000	800	900	1000	



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Materials Transportation Conveyor Belts Technical Specifications



Conveyor Belt COTTON Fabric (CC) Product Specification

Fabric Type	Approx. Thickness ply (mm)	Approx. Weight Kg/cm Width/mtr	Av. Breaking Strength of Individual fabric N/cm width		Maximum allowable working tension			
			Warp	Waft	N/cm/ply			
					Mechanical Fastners		Vulcanised Splices	
					Screw	Gravity	Screw	Gravity
				Take-up	Take-up	Take-up	Take-up	
280Z	1.20	0.012	625	335	44.1	47.1	47.1	52.9
320Z	1.25	0.014	690	370	52.9	55.9	55.9	60.8
360Z	1.40	0.016	720	380	55.9	64.7	64.7	69.6
420Z	1.85	0.019	865	455	69.6	75.5	75.5	80.4
480Z	2.00	0.020	1040	430	87.3	96.1	96.1	104.9
34oz	1.30	0.017	670	480	52.9	55.9	55.9	60.8

Conveyor Belt POLYESTER (EP) Canvas Fabric Product Specification

Belt Designation		Minimum Breaking Load of Belt Full Thickness		Thickness of Carcass (approx. mm)
		Longitudinal direction (KN/m. width)	Transverse direction (KN/m width)	
EP200/2	2EP100	200	80	2.1
EP250/2	2EP125	250	100	2.3
EP315/2	2EP160	315	125	2.4
EP315/3	3EP100			3.2
EP400/2	2EP200	400	160	2.5
EP400/3	3EP125			3.4
EP400/4	4EP100			4.1
EP500/2	2EP250	500	200	2.8
EP500/3	3EP160			3.4
EP500/4	4EP125			4.2
EP630/3	3EP200	630	250	3.6
EP630/4	4EP160			4.5
EP800/3	3EP250	800	320	4.2
EP800/4	4EP200			4.7
EP800/5	5EP160			5.6

* NN, all - nylon belts are regularly produced & widely used, conforming ISO: 9001 standards.

EP belts manufacturing undertaken for min. 2,000 mtr quantity order in each width & specs. Such belts are suggested for 2 Kms. long & above single belt system run due to nil stretch characteristics but are poor in heat resistance than nylon belts.



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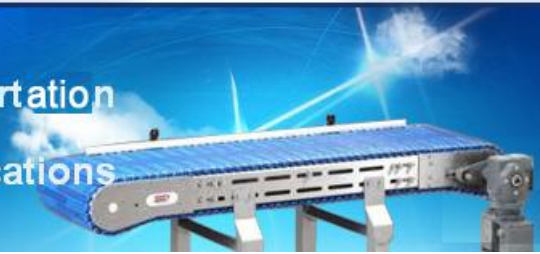
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Materials Transportation Conveyor Belts Technical Specifications



Conveyor Belt ENDLESSING (SPLICING)

Conveyor Belting can be rendered endless by jointing the two ends of a length of belt either by vulcanized splicing or by using mechanical fasteners. The former is recommended for better results. Hot Vulcanizing method of belts are followed by HIC for best durability.

Splicing: V-shaped (often called diamond) type of joints are strongly recommended. The extra length required to make the belt endless to requisite size shall be calculated by the following formula:

Splice Length = $W + 150 (N-2) + 25\text{mm}$ where,

W is width of belt (in mm), N is the number of plies.

For splicing procedure, please refer our separate detailed manual and for your splicing tool requirements viz., vulcanizing machine, tools & instruments, solution & cover compound, kindly call us.

CALCULATION OF BELT ROLL DIAMETERS

Where D = Roll Diameter (m)
d = Belt Thickness (m)
L = Belt Length (m)
K = Diameter of Core (m)

$$D = \frac{4d \cdot L}{\pi} + K^2 \text{ (m)}$$



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Conveyor Belt Recommended Minimum PULLEY DIAMETER

Belt Carcass Thickness (mm)				Recommended Minimum Pulley Diameter (mm)								
Canvas Fabric Belt Type				Percentage of maximum allowable working tension used								
All Cotton		All Nylon		Up to 30%			Over 30 up to 60%			Over 60 up to 100%		
From	To	From	To	Type of Pulley			Type of Pulley			Type of Pulley		
				A	B	C	A	B	C	A	B	C
2.0	3.1	2.3	2.7	160	160	125	200	160	125	250	200	160
3.2	3.9	2.8	3.5	200	200	160	250	200	160	315	250	200
4.0	5.0	3.6	4.4	250	250	200	315	250	200	400	315	200
5.1	6.2	4.5	5.5	315	315	250	400	315	250	500	400	315
6.3	7.8	5.6	7.0	400	400	315	500	400	315	630	500	400
7.9	10.0	7.1	8.8	500	500	400	630	500	400	800	630	500
10.1	12.5	8.9	11.1	630	630	500	800	630	500	1000	800	630
12.6	15.6	11.2	13.8	800	800	630	1000	800	630	1250	1000	800
15.7	17.5	13.9	15.5	1000	1000	800	1250	1000	800	1400	1250	1000
17.6	20.0	15.6	17.7	1000	1000	800	1250	1000	800	1600	1250	1000

Conveyor Belt Information To Be Supplied With Enquiry or Order

1. Belt width (mm)
2. Number of plies
3. Type of Fabric
4. Duty type
5. Thickness of Rubber Cover on Top (mm)
6. Thickness of Rubber Cover on Bottom (mm)
7. Grade of Rubber Cover
8. Length of Belt Required (meters.)
9. Ends of the Belt (open or endless)

A: Conveyor Driving Pulleys; **B:** Conveyor Snub Pulleys; **C:** Conveyor Bend Pulleys

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