HIC International Co Inc

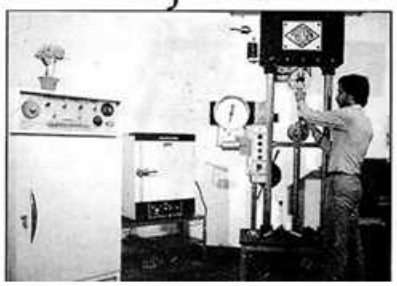
PH: 011 - 5547 2400, 2874 5120

UNIVERSAL

Looking toward tomorrow with fresh visions

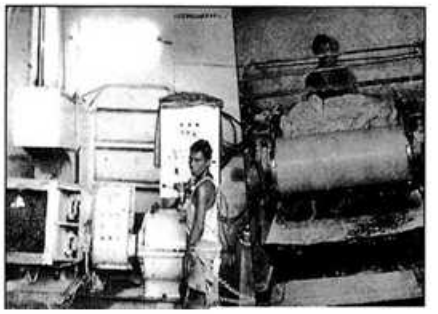
With inventive new approaches and advanced new technologies, we are steadily creating a new generation of **"Universal"** *products. Sheerly with a motto of "High-Quality, high performance* **"Universal"**, *product development involves the repetition of carefully conducted tests in its most advanced laboratory.*

Anil Gupta
Vice President



Conveyor Belts are lucratively employed for carrying and lifting materials by a number of industries such as thermal power, coal, mining, cement, fertilizer, sugar, tea estates etc. and* Universal *offers ideally designed belts for optimum resistant to the most common forms of damage from abuse.

Conveyor Belting Specifications Range



BELT WIDTHS

From 150 to 1600mm as per **IS: 1891** & **ISO 4195** in open or endless length as per customer's requirements sub. to length tol. 5%, -1%

REINFORCEMENT MATERIAL

In various strength ratings of fabrics in **cotton/cotton** (CC), nylon/nylon (NN) and polyester/nylon (EP). In cotton carcass, fabric types available are **28oz., 32oz., 36oz.,** for conveyor belt application and **34oz** hard duck for elevator belting.

In **nylon** carcass, belt types available are **250/2, 315/2, 315/3, 400/3, 400/4, 500/3, 500/4, 800/5,** in 3 duty types namely, **General Duty, Heavy Duty** and **Extra Heavy.**

PLY CONSTRUCTION

Universal Convevor Belts are manufactured in monoply and in multiples ranging upto 12 plies in different constructions, viz, **straight ply** (widely used & popular). Plies may be skim coated where service conditions are severe.

EDGE CONSTRUCTION

Universal All **cotton** conveyor belting is supplied in **moulded** edges to protect against edge wearing and prevent ingress of moisture, while **NN** or **EP** conveyor belting can be supplied both in **cut edges** as well as in moulded edges. However, **Universal** recommends a cut-edge construction for NN/EP beltings due to complete rot resistance.

"Universal" Hygienic Conveyor Belt conveying Tea leaves on CTC machine.

Abrasion Resistance Test

COVER GRADES

The rubber cover should be selected wisely by taking into account the type of materials to be handled and the operating condition of the belt. The thicknesses manufactured are 1 to 16 mm, and in steps of 0.5 mm available in the following grades:

Grade	Conforming To Standards	Applications			Physical Properties		
		Characteristics	Material Reference	Material Temp. Range	Tensile Strength (Min.) Kg/cm	Elongation (Min.) %	Abrasion (Max.) mm
Hygienic							
HYGIENIC	IS : 1891 (Part IV)	Non-toxic, tasteless and odourless. Recommended for handling foodstuffs.	Tea, Coffee, Pharamaceuticals, etc.	(–) 20°C to +60°C	100	350	350
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
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
Heat Resistant							
Universal "BLAZE" (HR)	IS. 1891 (Part I) T.	Super in heat and abrasion resistant.	Cement, Chemicals, Soda ash, etc.	+ 65°C to +120°C	130	350	250

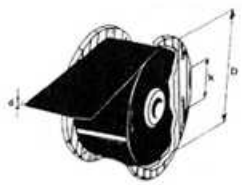
(Remarks) * Testing method of abrasion as per DIN 22102. # sub. to (-20% tol.)

Please consult us for special grades or for your other requirements.

CALCULATION OF BELT ROLL DIAMETERS

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

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



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Material Handling & MillDrive Hydraulics Solutions

Universal
CONVEYOR TRANSMISSION

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All Nylon (NN) NOMENCLATURE

Universal All Nylon Conveyor Belts are designed to indicate the minimum full thickness tensile strength and the number of fabric plies in the belt, for eg., All Nylon 500/3 represents a belt having full thickness tensile strength of min. 500KN/m width (=1275 kg/cm˙), incorporating 3 plies of nylon fabric.

Belt Designation Type	Rating	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˙) Upto 800	Upto 1500	Upto 2500	Maximum Belt Width (mm) For Adequate Troughing (Angle of picking idlers) 20˚	35˚	45˚
HEAVY DUTY (TYPE B)	250/2	25	2.6	0.030	900	650	500	450	450	500
	315/3	31	3.7	0.039	1200	1000	800	450	500	500
	400/4	44	4.8	0.048	1300	1100	850	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

All Cotton (CC) NOMENCLATURE

Fabric Type	Approx. thickness ply (mm)	Approx. weight kg/cm width/mtr.	Av. Breaking Strength of individual fabric N/cm width Warp	Weft	Maximum allowable working tension N/cm/ply Mechanical Fastners Screw Take-up	Gravity Take-up	Vulcanised Splices Screw Take-up	Gravity Take-up
28oz.	1.20	0.012	625	335	44.1	47.1	47.1	52.9
32oz.	1.25	0.014	690	370	52.9	55.9	55.9	60.8
34oz.#	1.30	0.017	670	480	52.9	55.9	55.9	60.8

4 Ply 28oz, 5 Ply 32oz, are std. popular belt strengths used in major applications.

RECOMMENDED MINIMUM PULLEY DIAMETER FOR CONVEYOR BELTS

Carcass Thickness (mm) Fabric Type All Cotton From	To	All Nylon From	To	Recommended Minimum Pulley Diameter (mm) Percentage of maximum allowable working tension used Upto 30% Type of Pulley A	B	C	Over 30 upto 60% Type of Pulley A	B	C	Over 60 upto 100% Type of Pulley 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

A : Driving Pulleys B : Snub Pulleys C : Bend pulleys

ELEVATOR BELTING

Elevator beltings are employed for very steep or vertical conveyance. Rubber elevator belts are recommended for centrifugal or continuous discharge of materials like coal, sand, clay, sugar, lime, cement and certain dry chemicals and manufactured in **all-cotton** 34oz., hard duck fabric.

Minimum Number of Plies for Elevator Belting

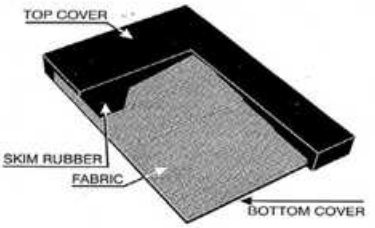
Class of material / Projection of Buckets	Lumpy/Sticky materials, heavy ores or other minerals	Gravel/Coarse sand, crushed stone, coal, lighter ores, etc.	Cement, dry sand, pea coal, fertilizer etc. (heavy but free from lumps)	Light powdery or free flowing materials free from lumps
100 mm		5	4	4
125 mm	7	6	5	4
150 mm	7	6	5	5
175 mm	8	7	6	5
200 mm	8	7	6	5
225 mm		8	7	6
250 mm		8	7	6

Top & Bottom Covers Thickness for Elevator Belting

Service	Thickness of covers Pulley side (Bottom)	Bucket side (Top)
Dry, fine material	1.5 mm	1.0 mm
Ash, coarse coal, sand and gravel, crushed stone or wet ores	1.5 mm to 3.0	1.0 mm to 1.5
Coarse gravel, Coarse stone, Heavy buckets or severe abrasion	2.5 mm to 3.0 mm	1.5 mm to 3.0 mm
Most Severe Service due to abrasion or large buckets	5.00 mm to 6.00 mm	3.00 mm to 5.00 mm

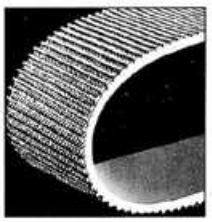
Minimum Pulley Diameters for Elevator Belting

Number of plies	Minimum Pulley diameters (mm) Head Pulley	Boot Pulley
4	500	350
5	600	450
6	750	500
7	900	600
8	1050	700



ROUGH TOP CONVEYOR BELT

for transporting fragile and packed goods



PVC COATED

Style	Std. Thickness (mm)	Av. T.S. Kg/2.5mm
PP T-1	1.3	300
PP T-2	1.7	500
*2PN/1/0**	2.9	

BELT ENDLESSING (SPLICING)

Conveyor Belting can be rendered endless by jointing the two ends of a length of belt either by vulcanised splicing or using mechanical fasteners.

The former is recommended for better results.

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) + 25mm where,

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

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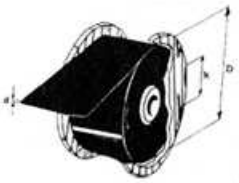
L = Belt Length (m)
K = Diameter of Core (m)

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



"**Universal**" reserves the right to alter the specification parameters without notice.

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Material Handling & HillDrive Hydraulics Solutions

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CONVEYOR TRANSMISSION