

# Electro-Static Dissipative (ESD) and Anti-Static (AS) Belts

Conveyor belts for certain uses must not collect electro-static charges, especially where impulsive releases of built-up charges could cause damage to conveyed products or cause other hazards.

Most belts are made of polymers that are insulators, with high surface resistivity that does not allow electrostatic charges to flow and dissipate. Belts are considered to be insulators when their surface resistivity is greater than  $10^{12}$  ohms/square ( $10^{12}$   $\Omega$ /sq.)

For cases where electrostatic protection is required, Volta makes special belting in two low resistivities that allow charges to dissipate onto grounded elements which contact the belt.

## Available Resistivity Ranges:

**Volta ESD** - Electro-Static Dissipative: With resistivity below  $10^8$  ohms/square ( $10^8$   $\Omega$ /sq.), ESD materials offer Volta's highest level of antistatic protection to date. ESD is useful in processes that are very sensitive to electrostatic discharges as in the manufacturing of electronics components. ESD belts are mechanically joined or finger-spliced to meet specified pull-strengths.

**Volta AS** - Anti-Static belt resistivity is lower than  $10^{10}$  ohm/square ( $10^{10}$   $\Omega$ /sq.) AS belting allows electro-static charges to flow and dissipate to grounded elements. Belting of AS materials allow convenient welding or thermal-fabrication.

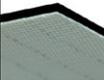
## Available Resistivity Ranges:

Although the ability to dissipate charges is only measured on a belt's surface, Volta meets the required levels of electrostatic protection by making their AS and ESD belts from special raw materials with lower surface and internal resistivity. Other manufacturers use coatings, surface-applied salts or solutions that wear-off or even contaminate conveyed products. Although these electrostatic protection methods may be less costly than Volta's approach, their ability to dissipate charges is lost as coatings wear-off or when conducting salts are removed by cleaning. Other manufacturers' ESD/AS belts can lose their conductive coatings or active salts simply through changes in weather and humidity.

Volta ESD and AS belts have been successfully implemented in electronics manufacturing facilities and other uses where these abrasion resistant materials have resulted in lower maintenance and service costs as well as reduced product loss. The dense resilient thermoplastic is quick and easy to install and cushions sensitive conveyed materials such as glass screens and components.

Following these guidelines, Volta offers the following:

## Flat Belts

Electro Static Dissipative (ESD) Belts												
Product & Color			Shore Hardness	Temperature Range	Coefficient of Friction on S.Steel (bottom)	Thickness		Minimum Pulley Diameter		Pull Force: Pretension of 1%		Range Ohms ( $\Omega$ )/ Square
						mm	mm	Inch	kg/cm	lbs/in		
	FRBL-ESD	Black	90A	0°C to 50°C / -32°F to 120°F	0.20	2	30	1 <sup>3</sup> / <sub>16</sub>	2.5	14	10 <sup>7</sup> - 10 <sup>8</sup>	
						2.5	37.5	1 <sup>1</sup> / <sub>2</sub>	3.12	17.44		
	FNBL-CB-ESD*	Black	90A	0°C to 50°C / -32°F to 120°F	0.38	1	20	<sup>25</sup> / <sub>32</sub>	1.8	10.08	10 <sup>7</sup> - 10 <sup>8</sup>	
						2.4	40	1 <sup>5</sup> / <sub>8</sub>	2.4	13.44		

\* Belts can only be made endless with mechanical systems or finger splice. Pull force values are recommended only when using finger splice.



**WARNING:** Volta AS and ESD belts are not ATEX certified at this time

## Round Belts

Round Anti Static (AS) Profiles						
Product & Color	Code	Hardness	Range - top surface	Diameter	Min. Pulley	
				mm	mm	Inch
	RPD-2-AS	88A/37D	10 <sup>9</sup> - 10 <sup>10</sup> ohms/sq	2	20	<sup>13</sup> / <sub>16</sub>
	RPD-3-AS	88A/37D	10 <sup>9</sup> - 10 <sup>10</sup> ohms/sq	3	30	1 <sup>3</sup> / <sub>16</sub>
	RPD-4-AS	88A/37D	10 <sup>9</sup> - 10 <sup>10</sup> ohms/sq	4	40	1 <sup>9</sup> / <sub>16</sub>
	RPD-5-AS	88A/37D	10 <sup>9</sup> - 10 <sup>10</sup> ohms/sq	5	50	2
	RPD-6-AS	88A/37D	10 <sup>9</sup> - 10 <sup>10</sup> ohms/sq	6	60	2 <sup>3</sup> / <sub>8</sub>
	RPD-8-AS	88A/37D	10 <sup>9</sup> - 10 <sup>10</sup> ohms/sq	8	80	3 <sup>1</sup> / <sub>8</sub>