

# siegling extremultus

flat belts



## FLASH STAR™

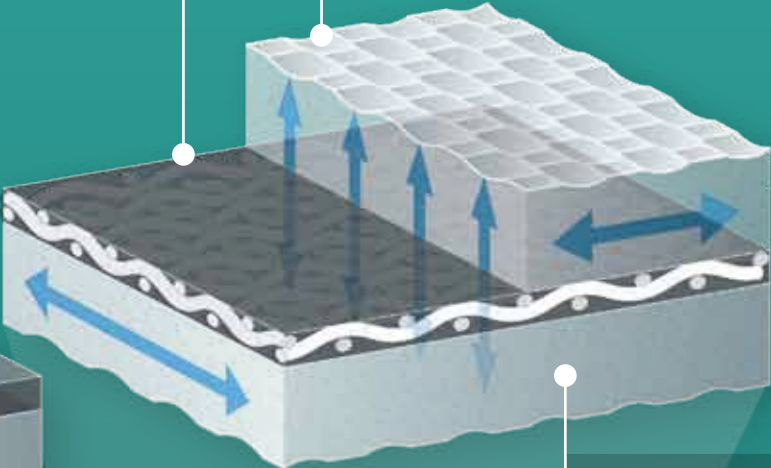
A FIRM GRIP ON STATIC ELECTRICITY

Polyester fabric tension member with conductive elements

Application-driven surface patterns

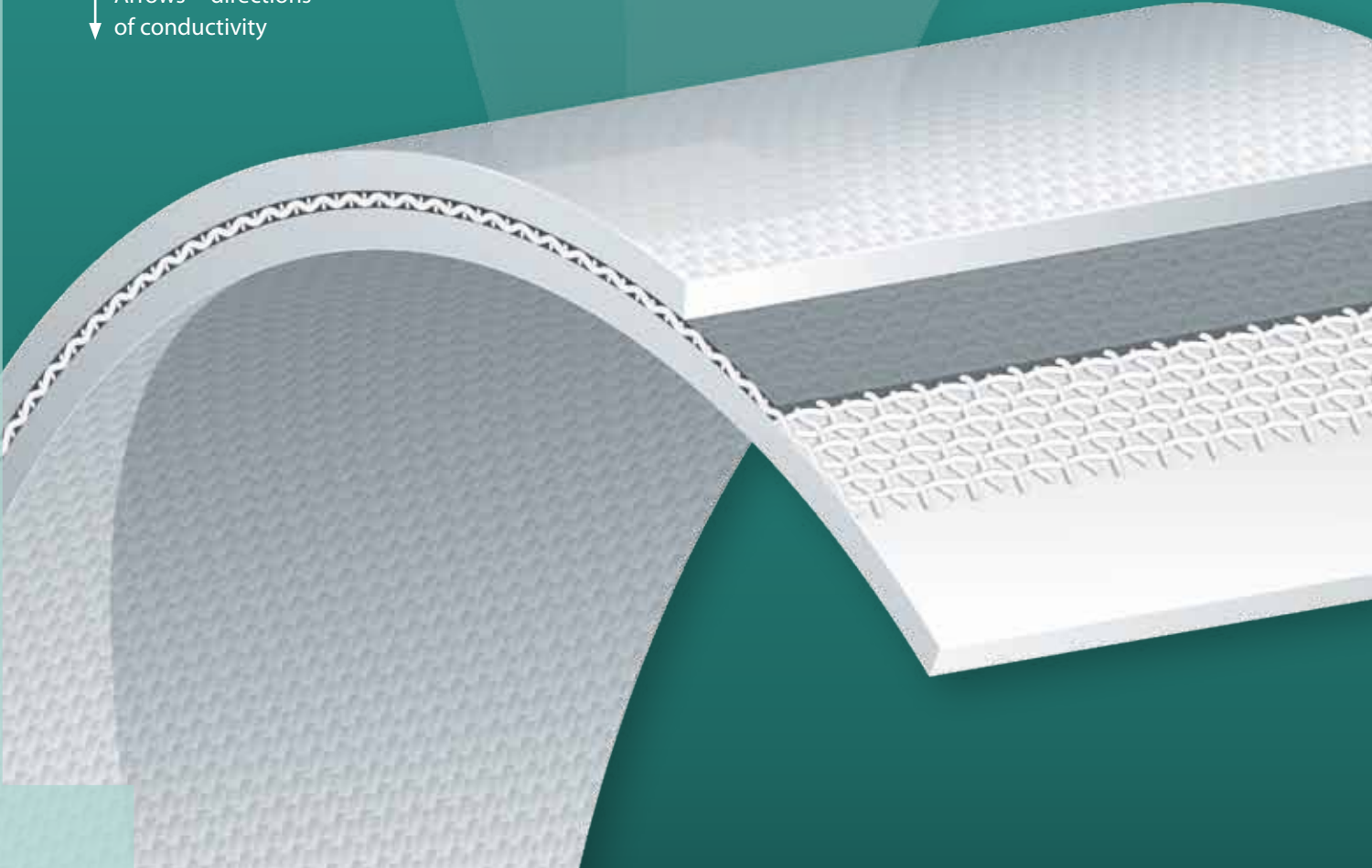
Alternative tension member material: polyamide sheet or elastic urethane

The whole belt is conductive in all three directions



Durable coatings with a large proportion of conductive particles

↑↓ Arrows = directions of conductivity



# FLASH STAR™ – A FIRM GRIP ON STATIC ELECTRICITY

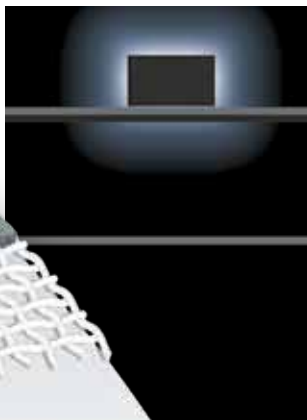
Flash Star™ flat belts play a major role in containing static electricity in power transmission and conveying systems. With excellent conductivity in all three directions, they help to ensure ESD\* compliance of the machinery and to prevent unwelcome side effects.

If you use power transmission and conveyor belts, it's impossible to avoid static electricity building up. This phenomenon is called triboelectric charging. It occurs when different materials come into contact with one another and then separate again. During conveying, the products concerned can also have the same impact.

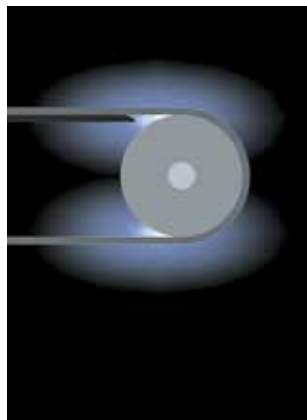
Flash Star™ flat belts make designing ESD-compliant machinery easier. Typical consequences of electrostatic build-up and uncontrolled discharge can be as follows:

- malfunctions when processing foil and paper products because they stick to one another or to the belt
- soiling due to dust, lint etc.
- electric shocks
- damage to electronic components (i.e. the products conveyed and machine components)
- fires and explosions

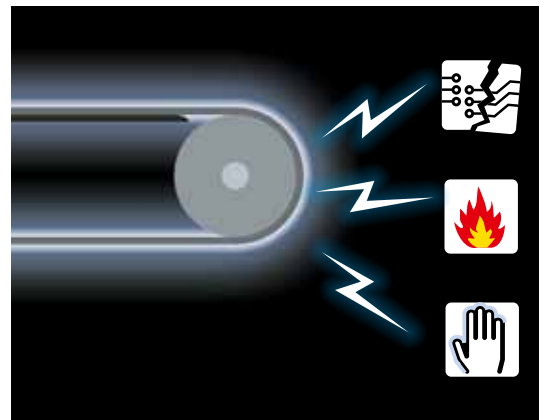
Electrostatic build-up from the products conveyed.



Electrostatic build-up due to triboelectric charging.

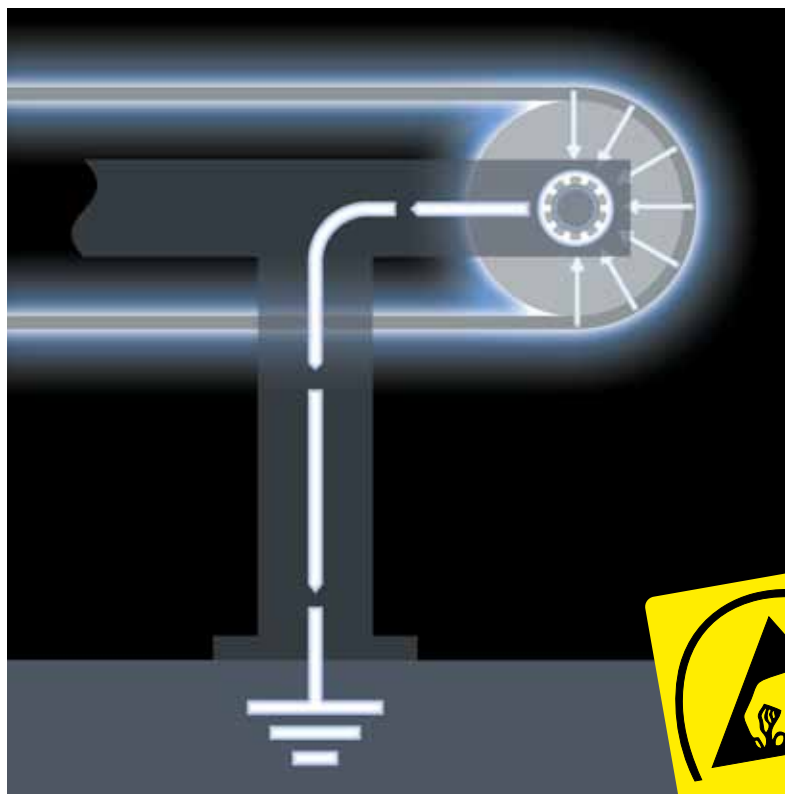


Hazards due to uncontrolled discharge of static electricity.



\* ESD = Electrostatic discharge

# FLASH STAR™ – CONDUCTIVITY RIGHT THROUGH THE BELT TOO



Conductivity right through the belt significantly enhances the controlled discharge of static electricity. Electricity in the belt is discharged directly via electrically conductive components on the machinery (e.g. rollers, supports). Extra mechanical components like metallic idlers, or brushes to discharge the build-up of static electricity aren't necessary.



ESD-protected product: this product can discharge electrostatic build-up in a controlled manner. The belt's resistance is under  $10^9 \Omega$  and compensates for differences in electricity potential in a short space of time.

## The properties

conductive in all three directions, even through the belt

supports the controlled discharge of static electricity

minimises the risk of uncontrolled discharge

also available in High Grip and Medium Grip versions

## The advantages

improves discharge, facilitates ESD-compliant machinery design

enhances process reliability and safety, e.g. for paper and foil

prevents electric shocks, sparks and damage to electronic components

a wide range of applications

# The Flash Star™ range

Article number	Total thickness approx. [mm]	d <sub>min</sub> [mm]*	Specific shaft load ** [N/mm belt width]	Elongation at fitting [% of belt length]	Weight approx. [kg/m <sup>2</sup> ]	Permitted operating temperature [°C]	Special characteristics and applications			
							Electrostatic property	Folder gluer belts	Machine tapes	Drag belts

E line (with polyester tension member)											
RR 4E-HC+ FSTR/FSTR gray	822151	1.35	14 <sup>1)</sup>	4	0.3–2.0	1.40	–20/+70	HC+	●	●	
RR 4E-HC+ NSTR/NSTR gray	822154	1.35	14 <sup>1)</sup>	4	0.3–2.0	1.40	–20/+70	HC+		●	
P line (with polyamide tension member)											
NN 4P-HC+ gray	855635	1.60	20	4	0.6–1.5	1.30	–20/+80	HC+	●	●	
Elastic line (with urethane tension member)											
UU 20U-HC+ FSTR/FSTR black	855631	1.10	20	0.25	3.0–8.0	1.20	–20/+60	HC+		●	●
UR 40U-HC+ GSTR/NSTR black/gray	855636	1.45	14	0.8	3.0–8.0	1.45	–20/+60	HC+	●	●	●

**Please note:** the values stated are nominal and can fluctuate in a belt whose width is a result of production processes. Our products are constantly adapted to market requirements. Consequently, changes in technical parameters can occasionally occur. **Therefore, please see the current product data sheets for specific information on designs and calculations.**

## Type code

R	R	4	E	-	HC+	NSTR / NSTR	gray
N	N	4	P	-	HC+		gray
U	R	40	U	-	HC+	GSTR / NSTR	black/gray

Food properties  
 Colour top face  
 Colour overall or underside  
 Surface pattern top face  
 Surface pattern overall or underside  
 Electrostatic property  
 Total thickness [1/10 mm]  
 Material of tension member  
 Type number  
 Coating top face  
 Coating underside

## Legend

The values stated were identified in standard ambient conditions (23°C, 50% rel. humidity)

\* Lower temperatures require larger drum diameters. For the Polyamid line, this also applies in the case of low humidity.

\*\* Relaxed specific shaft load at 1% elongation at fitting and 180° arc of contact in N/mm belt width.

<sup>1)</sup> 10 mm to 2.8 m/s max

- E** = Polyester
- N** = Polyester web
- P** = Polyamide P
- R** = High Grip or Medium Grip
- U** = Polyurethane
- HC+** = Conductive belt surfaces + conductive over the thickness
- FSTR** = Fine texture
- GSTR** = Coarse texture
- NSTR** = Normal texture

## Classification of our products' electrostatic characteristics

(Measurements compliant with DIN EN ISO 21178)

### Non-antistatic (NA)

Belt material with isolating properties.

### Antistatic (no special abbreviation)

Belt material with electrically conductive components within the belt or on the surface.

Conductivity of the whole belt lengthways  $R_{Di} < 3 \cdot 10^8 \Omega$ .

### Highly conductive (HC)

Conductive top face, usually conductive underside too. Must be antistatic as well.

Conductive on the surface lengthways  $R_{OB} < 3 \cdot 10^8 \Omega$ .

### Highly conductive plus (HC+)

Conductive top face, underside and through the belt too. Has to be highly conductive on both sides.

Conductive right through the belt  $R_D < 10^9 \Omega$ .

Flash Star™





## Siegling – total belting solutions

Committed staff, quality oriented organization and production processes ensure the constantly high standards of our products and services.

Forbo Movement Systems complies with total quality management principles. Our quality management system has ISO 9001 certification at all production and fabrication sites. What's more, many sites have ISO 14001 environmental management certification.



Ref. no. 252-2  
10/20 - UDH - Reproduction of text or parts thereof only with our approval. Subject to change.



### Forbo Siegling service – anytime, anywhere

The Forbo Siegling Group employs around 2,400 people. Our products are manufactured in ten production facilities across the world. You can find companies and agencies with warehouses and workshops in over 80 countries. Forbo Siegling service points are located in more than 300 places worldwide.

#### Forbo Siegling GmbH

Lilienthalstrasse 6/8, D-30179 Hannover  
Phone +49 511 6704 0  
[www.forbo-siegling.com](http://www.forbo-siegling.com), [siegling@forbo.com](mailto:siegling@forbo.com)



MOVEMENT SYSTEMS