

CONVEYOR BELT EDGE TYPES

TECHNICAL INFORMATION BULLETIN

A GUIDE TO THE TYPES OF BELT EDGE USED IN RUBBER CONVEYOR BELTS

Because of advances in technology and the types of materials used to manufacture rubber multi-ply conveyor belting there is often confusion concerning belt edge types. This information bulletin is designed to provide up-to-date guidance and clarification. There are basically three types of edges available: moulded edge, (cut and) sealed edge and (plain) cut edge.

MULTI-PLY AND SINGLE PLY CONSTRUCTION BELTS

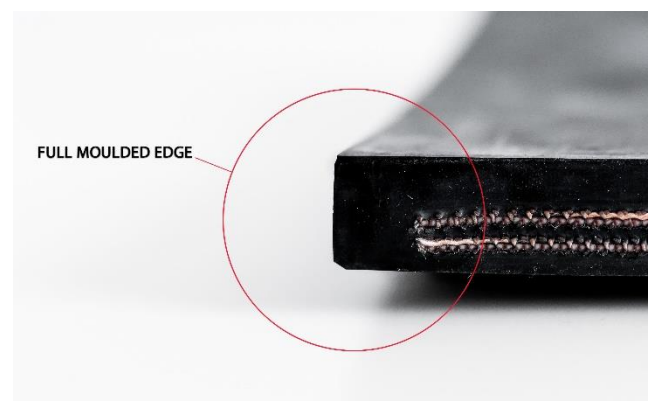
MOULDED EDGE

Many years ago, moulded edges were the norm because cotton was used as the reinforcing fabric in multi-ply belts. A moulded edge was necessary in order to prevent moisture penetrating the cotton fabric and causing it to rot. However, since the inception of synthetic ply belt carcasses using polyester and polyamide, this problem effectively no longer exists. As a consequence, belts without moulded edges are now the most commonly used.

Moulded edges can only be created when a belt is manufactured (assembled and vulcanised) to an exact width, usually a specific width required by the end-user. A small strip of non-reinforced rubber is attached to the side of the carcass during the calendaring of the belt. The strip is formed as an integral part of the belt during the vulcanizing process. This typically provides 5 to 15 mm of rubber on the belt edge without fabric reinforcement.

Moulded edges do not provide any structural advantage and can be susceptible to damage if the belt wanders off-track. Non-reinforced rubber can easily be cut off so when a belt with moulded edges gets damaged, large pieces of rubber are often torn off.

Most 'non-stock' belting in special grades (fire resistant for example) and/or non-standard sizes are made to order at the specific width requested by the customer. These will therefore naturally have moulded edges unless the widths and length combinations requested by the customer allow belts to be slit (cut) from a wider, more cost-efficient production width.

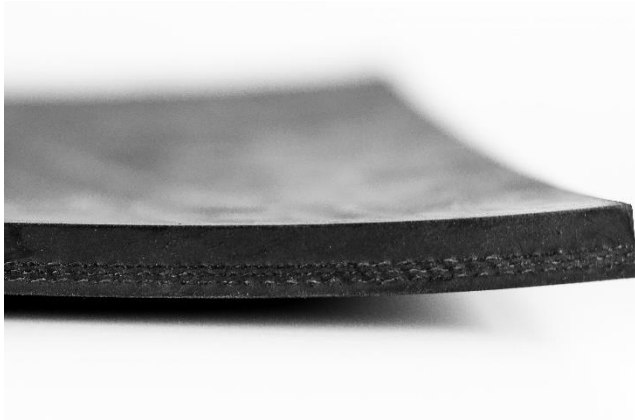


Moulded edge

SEALED EDGE

To maximise efficiency of production, standard production belts are usually made as wide as the production machinery will allow and are then subsequently cut to narrower widths. At Dunlop we automatically create belts with sealed edges using a special cutting process involving cutting knives that rotate at very high speed. The heat created by the friction of the rotating knives melts the carcass fibres and the rubber on the edge of the belt, effectively creating a seal. This is referred to as a 'cut & sealed edge' or simply 'sealed edge'.

Apart from a better visual aspect, the sealed edge means that the belt is not sensitive to moisture penetration and can therefore be used in wet conditions and is better suited to longer-term storage outdoors.



Cut & sealed edge

CUT EDGE

Belts with cut edges are produced in the same way as described previously but are cut (slit) using conventional rotating knives. A 'cut edge' is therefore not sealed. At Dunlop we do not recommend the use of unsealed (raw) cut belt edges as wet conditions and outdoor storage conditions can cause water to enter the carcass from the edge due to capillary forces. Although the carcass fibres are hardly affected, moisture can cause vulcanising problems when making splice joints.



Cut edge of multi-ply belt

STEELCORD CONSTRUCTION BELTS

All steelcord belts are manufactured to a specific set of specifications which fully embed the steel cords and are therefore only available with moulded edges. In the case of steelcord and steel reinforced fabric ply belting it is necessary to use moulded edges in order to prevent moisture from causing the steel to corrode over time.

ALL DUNLOP CONVEYOR BELTS ARE FULLY OZONE RESISTANT (EN ISO 1431) AND REACH COMPLIANT (EC 1907/2006).



WE ARE HERE TO HELP

Dunlop customers are always encouraged to discuss their specific needs with our team of specialists to help find the most cost effective solution.

For more information on this subject please contact your local Dunlop sales representative or Dunlop's Application Engineering team on +31 (0) 512 585 555.

All information and recommendations in this information bulletin have been supplied to the best of our knowledge, as accurately as possible and updated to reflect the most recent technological developments. We cannot accept any responsibility for recommendations based solely on this document.