Rolmat & Uniflex Belts

This Technical Data Sheet is designed to give you the detailed specifications required to choose which Rolmat or Uniflex belt is best suited to your applications. For further assistance, please contact you Locker Group sales consultant.

Rolmat Belts offer the following features and benefits:

- Very flat, smooth carrying surface, to maximise efficiency and minimise production losses
- Overcomes tracking errors and belt/pulley slip when positively driven by sprockets.
- The 9mm and 12mm ribbon wire section allows a large degree of wear before the belt requires replacement.
- Fast joining, with a single pin for speedy installation and repairs. In addition damaged sections can be removed and replaced quickly and simply.
- Rolmat belts are sprocket driven, down to 106mm for 25-25 belts and 93mm for 12-12 belts.
- Elevating flight attachments are also available
- Large open areas ensure Rolmat belts are ideally suited to washing, draining, recirculation or sizing, plus they're very easy to clean.
- Belts are available to suit your requirements in a range of apertures and weights, plus they can be customised to any length or width.

Heavy Duty Belts

As the name suggests, this range is designed for applications that require increased durability, with a studier belt. The wider, thicker flat wire and the generous 4.88 mm diameter pins have a positive effect on belt service life, also reducing the wear on sprocket teeth.

Standard Rolmat Specifications					
Belt Type	Flat Section mm	Pin Diam mm	Weight kg / m^2	Min O'all Width mm	Sprocket min P.C.D.
12-12 S	9.40x1.42	2.95	20.80	43	93
12-25 S	9.40x1.42	2.95	14.50	50	106
25-25 S	9.40x1.42	2.95	10.40	90	106

The nominal apertures of Rolmat, H.D. Rolmat and Uniflex are designated as the belt type viz 12-12 approximates a 12 x 12 mm opening.

Heavy Duty Rolmat Specifications					
Belt Type	Flat Section mm	Pin Diam mm	Weight kg / m^2	Min O'all Width mm	Sprocket min P.C.D.
12-27 HD	12.70x1.60	4.88	19	40	168
25-27 HD	12.70x1.60	4.88	15	40	168
31-31 HD	15.875x1.60	4.88	14	40	193

The nominal apertures of Rolmat, H.D. Rolmat and Uniflex are designated as the belt type viz 12 –27 approximates a 12 x 27 mm opening.

Sprockets

Sprockets for Rolmat may be Cast, Fabricated or Machined from round stock, but whichever method is chosen, it is recommended that fully machine cut teeth be used at all times.
It is also essential that diameters of sprockets on the same shaft be identical, that their keyways are in line, and when assembled on the shaft they are accurately spaced to match belt openings without interfering with the belt path. The latter is of particular importance when using Duplex sprockets.

Simple and duplex sprockets are used for driving Rolmat belts for the general run of applications. For unusual circumstances special arrangements can be adopted - while for exceptionally difficult applications, including very large load densities, a full width drive, engaging a tooth in each drive opening is suggested. Sprockets are positioned in the belt to drive against the round pine wire. Tail sprockets are offset to the drive by one belt opening, to allow the pin to rotate the sprockets.

Sprocket Materials

Select from Cast Iron, Steel, Stainless Steel or UHMW polymers to suit your application. Steel sprockets with hardened teeth are also supplied on request.

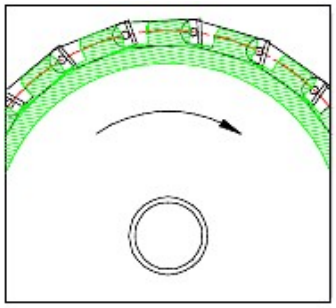
Sprocket Do's & Don'ts

Sprockets must operate against the round linkage pins, which locate them in odd openings on the head shaft, and even openings on tail or intermediate shafts.
Sprocket spacing is a function of belt load/speed factors.
Sprockets should be centralized in belt openings.
Sprockets and shafts must be keyed in line.
Sprockets on tail shafts should be indexed by a round wire.
Shafts must be at right angles to centre line of belt travel. A plain pulley may be used in lieu of sprockets on the tail shaft.

Standard Rolmat Sprockets

Part No.	No. of teeth	Approximate P.C.D. mm	Approximate O.D. mm	Approximate R.D. mm	App wt Steel	Std Max bore dist mm	L.T.B. Nom.	Face Width mm Nom.
Type 12-12 S								
R12.12.25	25	101	110	93	2.00	50	40	40
12.12.28	28	113	122	105	3.00	60	40	40
12.12.36	36	145	155	137	6.00	100	40	40
Type 12-25 S								
R12.25.19	(19)	155	163	147	5.00	60	40	40
12.25.28	28	227	236	219	8.00	60	40	40
12.25.35	35	283	292	275	12.00	60	40	40
Type 25-25 S								
R25.25.19	(19)	155	163	147	2.00	60	40	40
25.25.25	25	203	212	195	6.00	60	40	40
25.25.35	35	283	292	275	8.00	60	40	40

( ) Stock items Part No. relates to nominal belt designations.
Other sizes available on request.



Heavy Duty Rolmat Sprockets

Part No.	No. of teeth	Approximate P.C.D. mm	Approximate O.D. mm	Approximate R.D. mm	App wt Steel	Std Max bore dist mm	L.T.B. Nom.	Face Width mm Nom.
12.27 + 25.27 H.D. – UNIFLEX, UHD								
R12.27/19 R25.27/19	19	167	179	155	2.00	70	40	40
R12.27/23 R25.27/23	23	202	214	190	6.00	70	40	40
R12.27/28 R25.27/28	28	246	258	234	8.80	80	40	40
R12.27/36 R25.27/36	36	316	328	304	10.70	90	40	40
31-31 H.D.								
R31.31/19	19	192	207	177	5.70	70	40	40
R31.31/25	25	253	268	238	8.00	80	40	40
R31.31/35	35	354	369	339	12.50	90	40	40

Uniflex Belts are fully flexible and can maneuver around any processing corner or challenge you may have.

In addition they share these features and benefits with the Rolmat range;

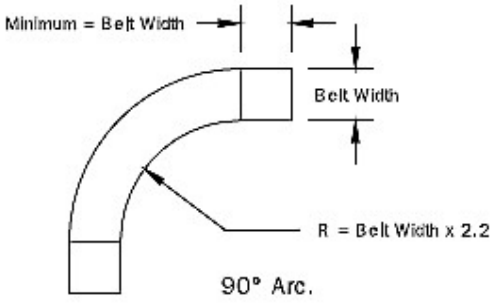
- Very flat, smooth carrying surface, to maximise efficiency and minimise production losses
- The ribbon wire section allows a large degree of wear before the belt requires replacement.
- Fast joining, with a single pin for speedy installation and repairs. In addition damaged sections can be removed and replaced quickly and simply.
- Rolmat belts are sprocket driven, down to 106mm for 25-25 belts and 93mm for 12-12 belts.
- Elevating flight attachments are also available
- Large open areas ensure Uniflex belts are ideally suited to washing, draining, recirculation or sizing, plus they're very easy to clean.
- Belts are available to suit your requirements in a range of apertures and weights, plus they can be customised to any length or width.

The collapsed inner section of the belt requires an adequate length to allow a straight line approach to the terminal sprockets. The sketch below outlines the recommended straight length prior to a corner, as well as the minimum recommended internal radius. Melwire and the Locker Group have reduced the minimum internal radii to ensure Uniflex belts can be used interchangeably with similar imported belting.

To reduce frictional drag and belt wear, a suitable anti-friction strip should be fitted to the internal radius thrust face. The contour must be uniform and provide a smooth transition from arc to straight section. (use only low hygroscopic material – do not attach rigidly, allow sufficient movement for thermal variation).
Filler discs or drums, between sprockets on terminal shafts aid in maintaining a flat belt surface, and protect belts from damage. Elevating flights are available for Standard and Heavy Duty belts.

Uniflex Belt Specifications					
Belt Type	Flat Section mm	Pin Diam mm	Weight kg / m^2	Min O'all Width mm	Sprocket min P.C.D.
12-27 US	9.40x1.42	2.95	14	55	168
12-27 UHD	12.70x1.60	4.88	19	68	168
25-27 UHD	12.70x1.60	4.88	15	80	168
25-27 URHD	12.70x1.60	4.88	15.30	80	168

The nominal apertures of Rolmat, H.D. Rolmat and Uniflex are designated as the belt type viz 12-12 approximates a 12 x 12 mm opening.



Installation and Operating Data – Rolmat & Uniflex

Any new machine requires careful assembly and installation, plus a running-in period; Rolmat and Uniflex belts are no different. Specific attention to a few basic engineering fundamentals, together with a careful installation will ensure satisfactory belt operation, and prolong the service life.

For example, Rolmat is a directional belting system, and performs best when installed to travel in the recommended direction, as shown below, with sprocket teeth bearing against the round linkage pins, and belt edges trailing.

1

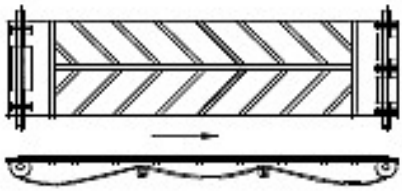
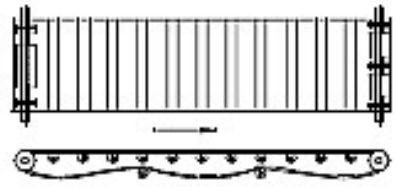


Illustration 1 shows a herringbone support grid. This provides a flat carrying surface while allowing full circulation of fluids around the product, and distributes wear uniformly across the belt face. Grid frequency should be selected to minimize belt deflection under load.

Where a flat surface is not necessary, roller support as in diagram 2, reduces belt wear and drag.

2

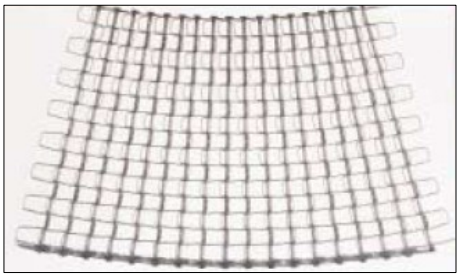


When designing a unit, support roll frequency, as with grids, should be selected to achieve the required degree of flatness in the belt. Minor adjustment is then best effected by adjusting belt tension. Consult our technical division for further details.

Herringbone supports can be faced with one of the low-friction polymers where temperature allows.
Maximum load, speed, and drive characteristics should be discussed with our technical division. Maximum recommended belt speed is 0.75m/sec.

Edge Finishes

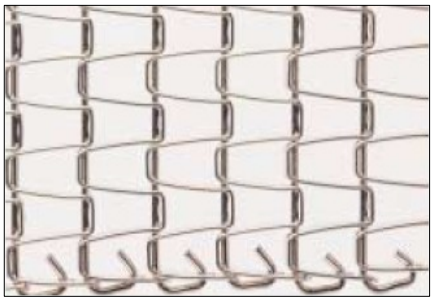
Rolmat and Uniflex belts can be finished in a variety of edges, depending on the application and belt specification.



Type 25-27 UR.HD Reinforced Button Edge

Type 12-25 WEIP Intermediate Pin Welded Edge

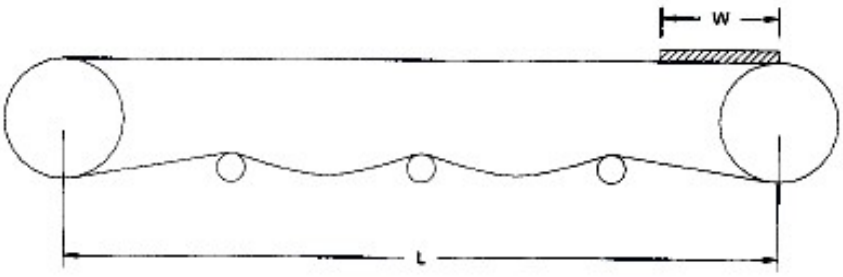
Type 31-31 HD Heavy Duty Button Edge



Type 12-25 S Clenched Edge

Engineering Belt Formulae

When calculating belt requirements and measures, the following elements and formulae are very useful.



T =	Drive Tension
L =	Shaft centres (metres)
B =	Belt Weight (kg/mtr)
b =	Belt width (m)
W =	Product Weight (kg/mtr)
F1 =	Friction factor (load path)
F2 =	Friction factor (return path)

Typical Friction Values

UHMW =	0.20
Stainless Steel =	0.40
Free turning Rollers =	0.10
Mild Steel =	0.36

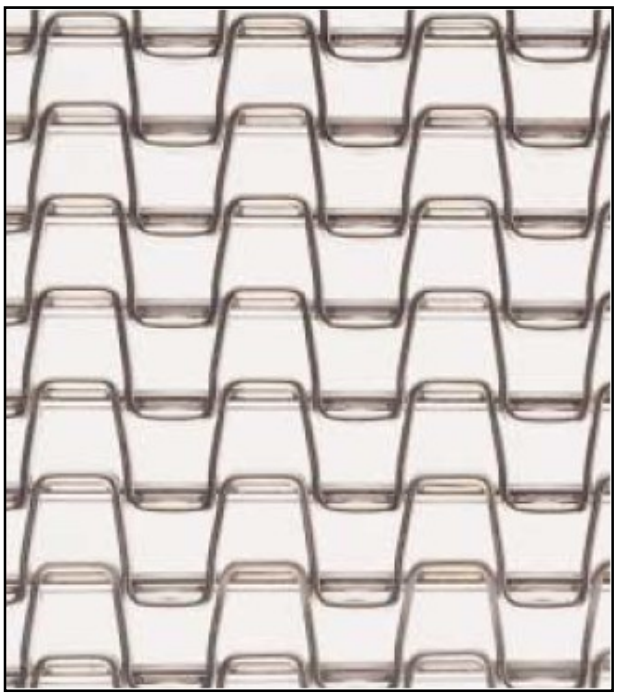
$$T = \{[(W + B) \times L \times F1] + (B \times L \times F2)\} \times b \times 9.81$$

Numer of sprockets per shaft
= (belt width / 152) + 1

After calculating sprocket number using above formula,
round up to the next whole number.

For further assistance talk to your Locker Group sales consultant.

Belt Types



Type 12-12 S

Type 12-25 S

Type 12-25 S with Intermediate Pin

Type 25-25 S

Type 25-27 H.D.

Type 12-27 H.D.

Type 31-31 H.D.

Type 12-27 S with elevating flight