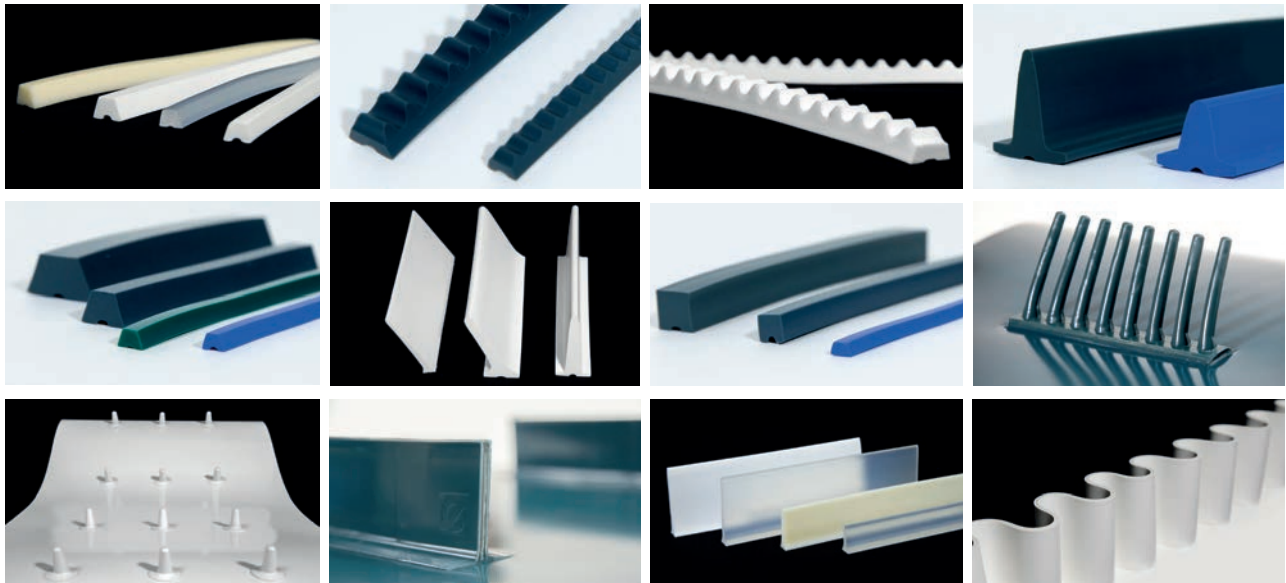


# Cleats and "Runer" sidewalls



2021-2022

Cleats, profiles, tracking guides,  
reinforced profiles, fingers, short fingers...  
"Runer" sidewalls with and without base



# Cleats (flights)

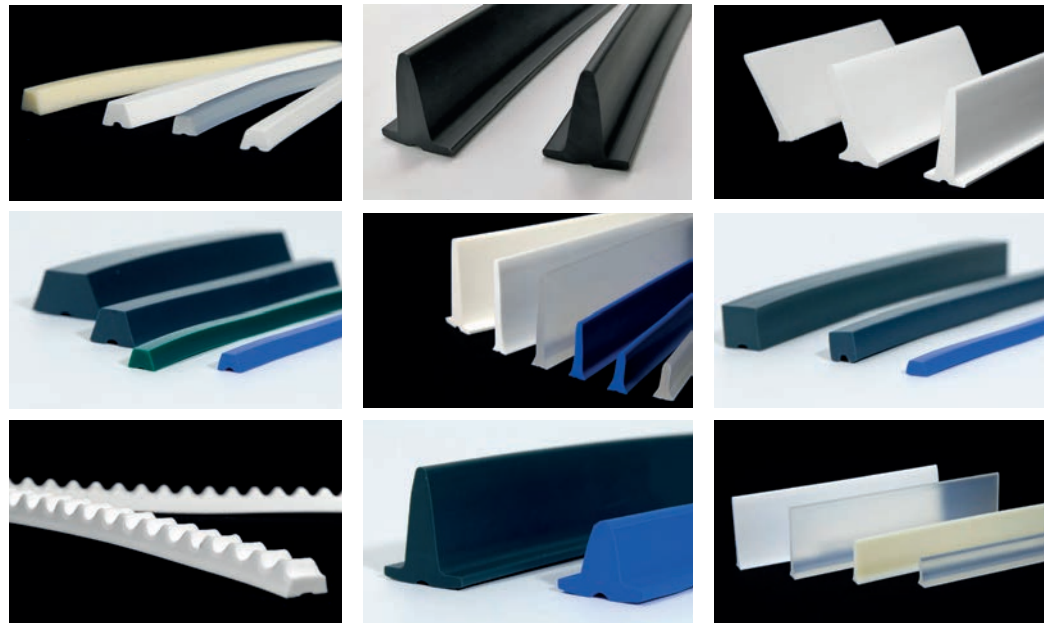
## for conveyor belting

Inclined conveyors occasionally require belts with profiles or cleats (flights) on the carrying surface. These prevent slippage of the conveyed material and increases the belt capacity.

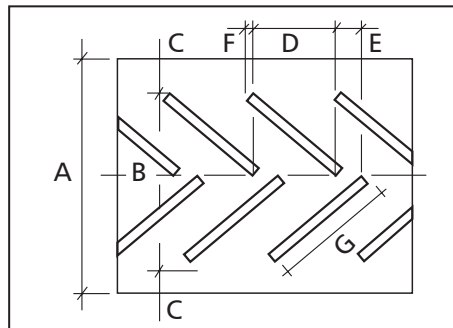
The type and height of the most suitable cleat (flight) is determined according to the characteristics of the conveyed material and the inclination of the conveyor. Optimum conveying capacity can be achieved up to angles of 70° by this means.

Notched PVC and PU trapezoidal tracking guides can be supplied; this increases belt flexibility and when fitted to the underside of the belt can reduce the minimum pulley diameter by 10%.

**esbelt** cleats (flights) are oil and fat resistant.



## Arrangement of cleats in open "V" pattern (herringbone)



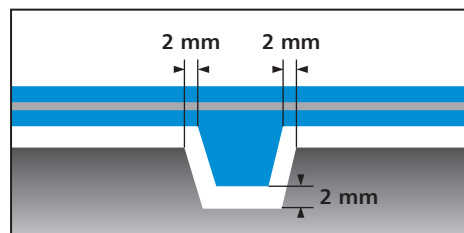
Dimensions mm							
A	400	500	600	650	800	1000	1200
B	300	400	450	480	600	800	900
C	50	50	75	85	100	100	150
D	180	205	210	225	286	348	390
E	20	20	20	20	20	20	20
F	18	18	24	30	50	60	60
G	250	300	325	350	450	550	600

## Recommendations for profile attachment

Profile attachment is best carried out on **2 or more ply belts**.

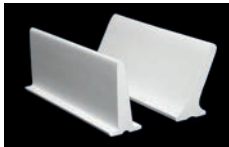
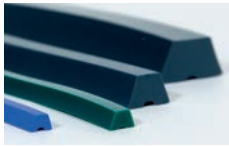
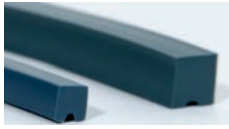
Minimum covers thickness for profile type are given below.

To obtain good results with a tracking guide, the grooves in the pulleys, rollers and slider beds must be larger than the tracking guide which is welded to the belt.



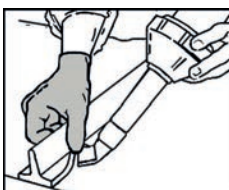
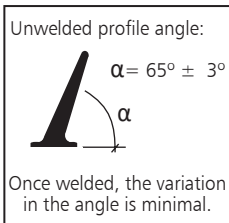
Material and type of profile	Minimum cover thickness	
PVC	short fingers	0,3 mm
	height 20 and 30 mm	0,5 mm
	reinforced profiles	0,8 mm
	height 40, 50, 60 mm and types NE.012 and NE.C14	0,8 mm
PU	height 70, 80 mm and types NE.K16, NE.015 and fingers	1 mm
	TPE	all types
PO	all types	0,5 mm

# Cleats (flights)



(2) The minimum recommended diameters given are for normal working conditions, at 20°C. Lower temperatures require greater diameters.

(3) Profile positioning:  
 T - Transversal  
 G - Inner tracking guide  
 L - Lateral retaining wall,  
 V - V-shaped



Section	Type	Dimensions			Material (1)	Weight g/m	Transverse		Longitudinal		Possible positioning (3)
		b mm	h mm	a mm			minimum pitch mm	minimum $\varnothing$ (2) mm	minimum $\varnothing$ mm (2) bottom side	top side	
	NE.008-62	8	8		PVC	75	28	100	60	110	T - G - L - V
	NE.012-62	12	12			175	32	100	80	120	
	PE.008	8	8		PO	56	28	100			T - V
	PE.012	12	12			133	32	100			
	NE.015-62	20	15		PVC	330			200	250	G - L
	NA.X04-62	6	4	4,0	PVC	23			25	30	G - L
	UA.X04	6	4	4,0	PU	24			25	30	G - L
	NE.Y05-62	8	5	4,4	PVC	40	28	50	50	60	T - G - L - V
	NE.Z06-62	10	6	5,6		60	30	70	70	80	
	NE.A08-62	13	8	7,2		100	33	90	90	100	
	NE.B11-62	17	11	9,0		180	37	100	100	120	
	NE.C14-62	22	14	11,8		300	42	150	150	180	
	NE.K16-70	30	16	18,4		470	50	250	250	250	
	UE.Y05	8	5	4,4	PU	40	28	50	50	60	T - G - L - V
	UE.Z06	10	6	5,6		59	30	70	70	80	
	UE.A08	13	8	7,2		98	33	90	90	100	
	UE.B11	17	11	9,0		170	37	100	100	120	
	UE.Y05-MD-BL09	8	5	4,4		40	28	50	50	60	
	UE.Z06-MD-BL09	10	6	5,6		59	30	70	70	80	
	UE.A08-MD-BL09	13	8	7,2	98	33	90	90	100		
	PE.Z06	10	6	5,6	PO	46	30	100			T - V
	PE.A08	13	8	7,2		75	33	110			
	PE.B11	17	11	9,0		130	37	120			
EE.Z06	10	6	5,6	TPE	56	30	80		80	T - G - L - V	
EE.A08	13	8	7,2		95	33	90		100		
EE.B11	17	11	9,0		167	37	100		120		
	DA.X04-62	6	3,5	4,25	PVC	18			15		G - L
	DE.Y05-62	8	4,5	4,7		30			35		
	DE.Z06-70	10	5,5	6,0	PVC	45			50		G - L
	DE.A08-62	13	7,5	7,5		75			70		
	DE.B11-62	17	10,5	10,3		140			80		
	DE.C14-62	22	13,5	12,2		245			125		
	DE.K16-70	30	15,5	18,4		370			170		
	DUA.X04	6	3,5	4,25	PU	19			15		G - L
	DUE.Y05	8	4,5	4,7		35			35		
	DUE.Z06	10	5,5	6,0	PU	45			50		G - L
	DUE.A08	13	7,5	7,5		74			70		
DUE.B11	17	10,5	9,0	130				80			
NV.020-70	25	20		PVC		285		120			
NV.030-70	25	30			370		120				
NV.040-70	25	40			450	45	120				
NV.050-70	25	50			600		120				
NV.060-70	25	60			700		150				
NL.030-70	25	30		PVC	430		50	120		T	
NL.040-70	25	40			550	50	120				
NL.050-70	25	50			700	50	120				
NL.060-70	25	60			780	50	150				
NL.070-70	40	70			1240	130	170				
NL.080-70	40	80			1400	130	180				
UV.020	10	20			PU	140		40			
UV.030	10	30		180		30	45				
UV.040	10	40		230			50				
UV.050	10	50		300			50				
PV.020	10	20		PO	95					T	
PV.030	10	30			135	30	100				
PV.050	10	50			235						
EV.020	10	20			TPE	130					
EV.030	10	30		170		30	80				
EV.050	10	50		300							
UL.030	10	30		PU	215		45			T	
UL.040	10	40			255	40	50				
UL.050	10	50			320		50				
PL.030	10	30		PO	155					T	
PL.050	10	50			225	40	100				
EL.030	10	30		TPE	210		80			T	
EL.050	10	50			310						
	NEM.040-62	45	40		soft	640		120			T
	NEM.060-62	55	60		PVC	1050		150			T
	NEQ.040-62	42	40		soft	635		120			T
	NEQ.060-62	60	60			1150		150			
	NEQ.070-62	60	70			1400		170			

# Profiles

(1) Material		Color	Special characteristics	Hardness	Temperature °C
PVC	PVC	Green 00 - White - Blue 06	FDA, EU, antistatic, oil resistant.	70° ShA	-10 +80
PVC	PVC	Black	Antstatic, oil resistant.	70° ShA	-10 +80
soft PVC	PVC	Green 00 - White - Blue 06	FDA, EU, antistatic, oil resistant.	62° ShA	-15 +80
PU	Polyurethane	Green 09 - White - Blue 06	FDA, EU, oil resistant.	85° ShA	-10 +100
PU-MD	Polyurethane MD	Blue 09	FDA, EU, oil resistant Metal detectable, Anti-hydrolysis.	85° ShA	-20 +100
PO	Polyolefin	Transparent	FDA, EU, oil resistant.	90° ShA	-10 +50
TPE	Polyester	Natural	FDA, EU, oil resistant.	40° ShD	-20 +105

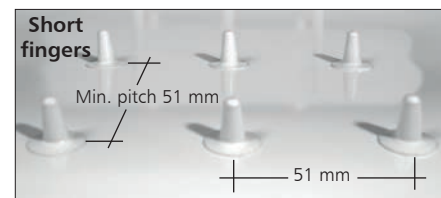
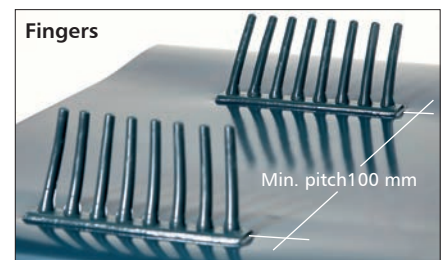
## Other profiles

### Fingers and Short Fingers

As an alternative of cleats, **esbelt** provides "Finger" profiles. Specially indicated for conveying fruit on inclined sections (preventing sharp knocks that might damage the appearance) and frozen food products (the cylindrical structure prevents the frozen product from sticking to the belt).

**Esbelt** offers "Short Fingers" used mainly in harvesters of thin-skinned (apples, nectarines, peaches, pears, etc.) and the conveyance and selection of asparagus.

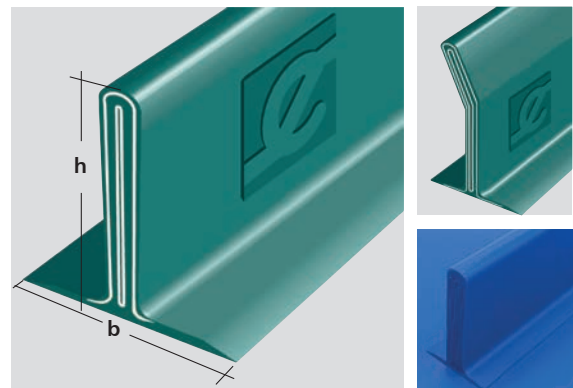
Profile	Height mm	Hardness °ShA	Color	∅ minimum mm
Fingers	92	80	White - Green - Blue 06	100
Short fingers	25	67		60



### Reinforced profile

**Esbelt** offers reinforced PVC profiles in 4 different heights, specially designed for applications involving difficult conditions; in general all applications in which the profiles undergo impact on receiving or conveying material. Excellent resistance to ripping and cutting. Strong and long-lasting that increase transverse rigidity of the belt, producing greater stability on the conveyor.

Profile	Dimensions		Transverse		Length mm	Color	Material
	b mm	h mm	Minimum pitch mm	minimum ∅ (2) mm			
NRR030	50	30	70	120	2000	Blue 06, White and Green 00	PVC
NRR050		50					
NRR070		70					
NRR100		100					
NIR070		68					
NIR100		97					
URR040	25	40	70	80	1000	Blue 06	PU



### Belt support on the return side

1. Belt with cleats (flights) in "V", section supported on a cylindrical roller.

2. Supported on two lateral pulleys.

3. Supported on three pulleys.

4. Belt with internal tracking guide supported by a cylindrical roller and driven by a grooved driving pulley.

5. Belt with sidewalls supported by a cylindrical roller which is narrower than the belt.

6. Belt with sidewalls and transverse cleat supported by a cylindrical roller.

# Runer

## PVC "Runer" -without base-

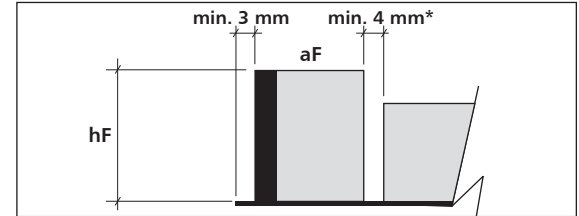
Profile welded directly onto belt.

### FRRS Type

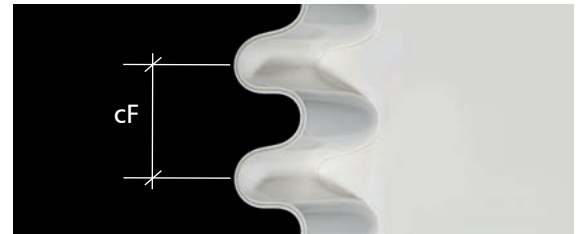
- With internal polyester reinforcement: Resistant to the drum pressure at the inflections and on the return side.
- Recommended for particularly long and wide conveyors or for conveyors with inflections.

PVC	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Thickness mm
FRRS35	35	48	55	80	5
FRRS40	40	48	55	100	5
FRRS45	45	48	55	100	5
FRRS50	50	48	55	120	5
FRRS55	55	48	55	120	5
FRRS60	60	48	55	140	5
FRRS65	65	48	55	140	5
FRRS70	70	48	55	160	5
FRRS75	75	48	55	160	5
FRRS80	80	48	55	180	5
FRRS85	85	48	55	180	5
FRRS90	90	48	55	200	5
FRRS95	95	48	55	220	5
FRRS100	100	48	55	220	5

Layout of transverse cleat and "Runer" PVC without base.



\*When a cleat is type NL.070 or NL 080, the minimum distance of 4 mm will be increased to 5 mm.



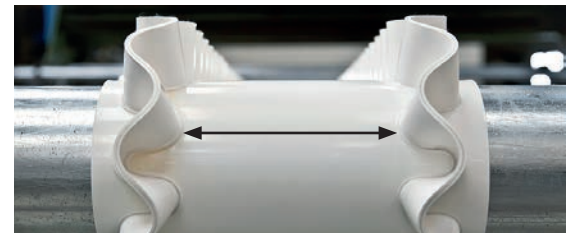
The distance between the transverse cleats should be a multiple of the - cF - pitch, if it is to coincide with the undulation of the "Runer".

The maximum width for belts with Runer is:

- 2,400 mm with PVC Runer.
- 900 mm with PU Runer.

The minimum length for endless belts with the Runer profile is:

- 2,500 mm with PVC Runer.
- 3,510 mm with PU Runer.



The minimum distance between 2 Runer should be:

- 100 mm with PVC Runers
- 30 mm with PU Runers

### FSSS Type

- With internal polyester reinforcement.
- Recommended for straight or lighter conveyors.

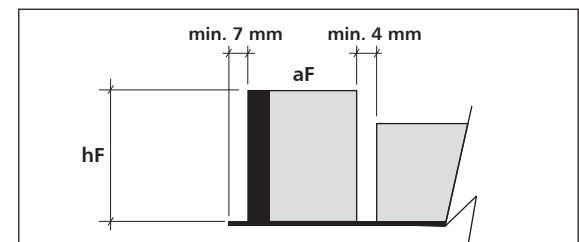
PVC	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Thickness mm
FSSS35	35	30	30	80	3,5
FSSS40	40	30	30	90	3,5
FSSS45	45	30	30	90	3,5
FSSS50	50	30	30	100	3,5
FSSS55	55	30	30	100	3,5
FSSS60	60	30	30	110	3,5
FSSS65	65	30	30	120	3,5

FRRS and FSSS types: White color - Hardness 70°ShA  
Green color - Hardness 78°ShA

### FNSS Type

- No internal reinforcement: Developed for use in conveyors with extremely small pulley diameters.
- Recommended for small straight conveyors (no inflections).

PVC	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Hardness °ShA	Thickness mm
FNSS35	35	35	30	40	70	4
FNSS45	45	35	30	50	70	4



Layout of transverse cleat and "Runer" PU without base.

The length of the transverse cleats should be a multiple of 25 mm.

## Standard PU -without base-

Profile welded directly onto the belt, without internal reinforcement.

## Premium PU -without base-

PU	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Hardness °ShA	Thickness mm
UNSS20	20	28	30	35	85	2,1
UNSS25	25	28	30	40	85	2,1
UNSS30	30	28	30	45	85	2,1
UNSS35	35	28	30	50	85	2,1
UNSS40	40	28	30	60	85	2,1
UNSS45	45	28	30	65	85	2,1
UNSS50	50	28	30	75	85	2,1
UNSS55	55	28	30	80	85	2,1
UNSS60	60	28	30	90	85	2,1

PU	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Hardness °ShA	Thickness mm
UPNSS20	20	28	30	35	85	2,1
UPNSS25	25	28	30	40	85	2,1
UPNSS30	30	28	30	45	85	2,1
UPNSS35	35	28	30	50	85	2,1
UPNSS40	40	28	30	60	85	2,1
UPNSS45	45	28	30	65	85	2,1
UPNSS50	50	28	30	75	85	2,1
UPNSS55	55	28	30	80	85	2,1
UPNSS60	60	28	30	90	85	2,1

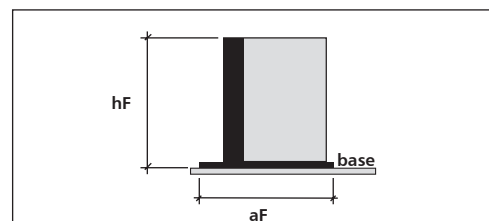
## "Runer" -with base-

### PVC "Runer" - with base

FSRC Type	PVC	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Thickness mm
FSRC35		35	55	55	80	3,5
FSRC55		55	55	55	120	3,5
FSRC85		85	55	55	180	3,5

Comments: Wave width = 45 mm / Thickness base = 3.5 mm

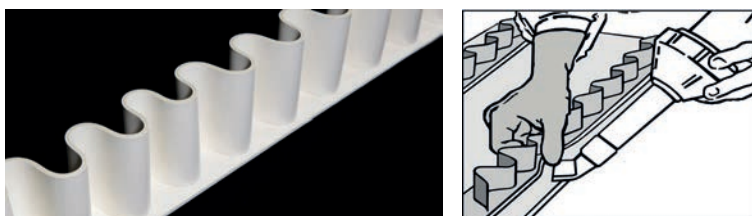
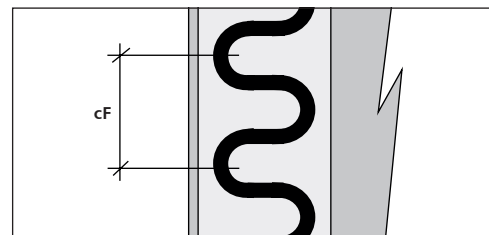
Outline of "Runer" with base.



### PU "Runer" - with base

UNSM Type	PU	hF mm height	aF mm width	cF mm pitch	Minimum diameter mm	Thickness mm
UNSM35		35	44	30	70	2,1
UNSM55		55	48	30	100	2,1

Comments: Wave width = 28 mm / Thickness base = 3.3 mm



Profile with base for welding by hand with the Leister.

### Available colors

<b>PVC Runer</b>	<ul style="list-style-type: none"> <li>- <b>White/Blue:</b> Non-toxic, FDA-EU, suitable for using with foodstuffs.</li> <li>- <b>Green:</b> Suitable for all uses that do not require food quality belts.</li> </ul>
<b>PU Standard Runer</b>	- <b>White/Blue 06/Green 09:</b> Non-toxic, FDA-EU, suitable for using with foodstuffs.
<b>PU Premium Runer</b>	<ul style="list-style-type: none"> <li>- <b>White:</b> Non-toxic, FDA-EU, suitable for using with foodstuffs. Anti-hydrolysis.</li> <li>- <b>Blue 09 MD:</b> Non-toxic, FDA-EU, suitable for using with foodstuffs. Metal detectable. Anti-hydrolysis.</li> </ul>

### Recommendations for Runer attachment

In order to produce a good weld for the Runer, **esbelt** recommends certain minimum belt cover thicknesses, depending on the type and height of the Runer being attached.

The table gives the minimum cover thicknesses for the type of Runer

Material and type of Runer	Maximum Runer height	Minimum cover thickness
<b>PVC (FRR, FSS y FNS)</b>	55 mm	≥0,50 mm
<b>PVC (FRR, FSS)</b>	from 60 mm to 75 mm	≥0,80 mm
<b>PVC (FRR)</b>	from 80 mm	≥1,50 mm
<b>PU</b>	all types	≥0,30 mm
<b>With base PVC and PU (FSRC and UNSM)</b>	all types	≥0,80 mm

### General outline of nomenclature. Explanation of codes:

<b>FSRC55WH</b>	1°	Type of material	—————	<b>F</b> PVC / <b>U</b> PU
<b>FSRC55WH</b>	2°	Reinforcement	—————	<b>R</b> Fabric with high transv. rigidity / <b>S</b> with std. transv. rigidity / <b>N</b> Not reinforced <b>PN</b> Premium not reinforced
<b>FSRC55WH</b>	3°	Pitch	—————	<b>S</b> 30 mm / <b>R</b> 55 mm
<b>FSRC55WH</b>	4°	Base	—————	<b>S</b> With base / <b>C</b> With thin base (PVC=3,5 mm and PU=2,3 mm) <b>M</b> With thick base (PVC=5 mm and PU=3,3 mm)
<b>FSRC55WH</b>	5°/6°	Runer height (mm)	—————	From 35 mm to 100 mm.
<b>FSRC55WH</b>	7°	Color	—————	<b>BL06</b> Blue 06 / <b>BL09</b> Blue 09 / <b>GR</b> Green / <b>WH</b> White