Hunter Douglas HeartFelt® **linear felt ceiling**

1. **Product description (various configs, modulations)**
   HeartFelt® linear felt is a linear box shaped panel made from non-woven thermo-formable virgin[1] PES fibres. Dimension (bxh) 40x55mm with an open joint between the panels. Additional panel heights 80mm and 105mm (*only in colours 7593, 7594, 7596, 7597, 7598*). For the higher panels, carrier modules from 110mm up to 200mm have been created.

System module	Joint width	Openness %
200mm	160mm	80%
190mm	150mm	79%
180mm	140mm	78%
170mm	130mm	76%
160mm	120mm	75%
150mm	110mm	73%
140mm	100mm	71%
130mm	90mm	69%
120mm	80mm	67%
110mm	70mm	63%
100mm	60mm	60%
90mm	50mm	55%
80mm	40mm	50%
70mm	30mm	43% *1)*
60mm	20mm	33%
50mm	10mm	20%

1) comparable to Luxalon® 30BD/30BXD panels

The carriers into which the panels are clipped are made from transparent coated (7178) or black (1863) aluminium with a height of ca 62mm, total system height 85mm.

[1] Virgin material means made from new fibres. Due to the fire retardant properties of the fibres it is not possible to use recycled material. Also the mandatory chemical analysis of the material for C2C certification makes it virtually impossible to work with fibres from recycled material.

HeartFelt® linear felt ceiling panels are available in 7 shades of grey and 5 earth-tones. The shades in colour are achieved by varying the ratio between the white, black and/or brown fibres in the mix of the base material.

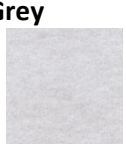
HD Colour codes			
Shades of Grey		**Earth Tones**	
White	7593		
Off-white	7595	Crème	7575
Light grey	7596	Light brown	7576
Middle grey	7597	Middle brown	7577
Dark grey	7598	Dark brown	7578
Anthracite	7599	Umber	7579
Black	7594		

Other colours and or finishes may be introduced in a later stage.

HeartFelt® colours

Shades of Grey

7593 White



7595 Off-White

7596 Light Grey

7597 Medium Grey

7598 Dark Grey

7599 Anthracite

7594 Black

Earth Tones

7575 Crème

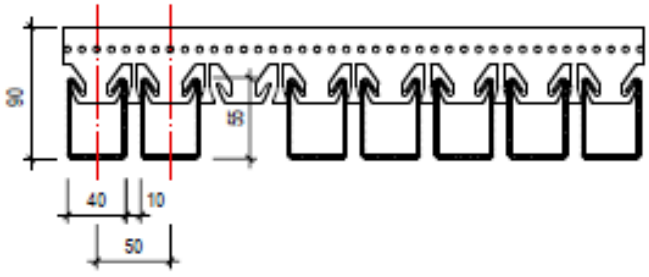
7576 Light Brown

7577 Medium Brown

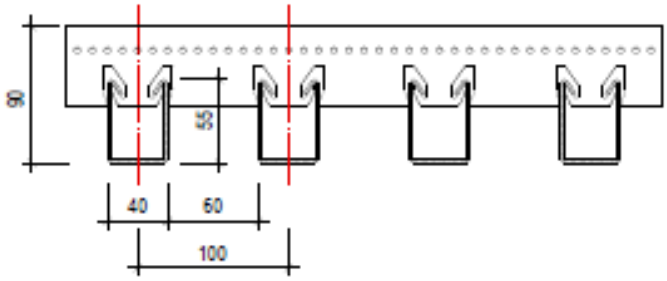
7578 Dark Brown

7579 Umber

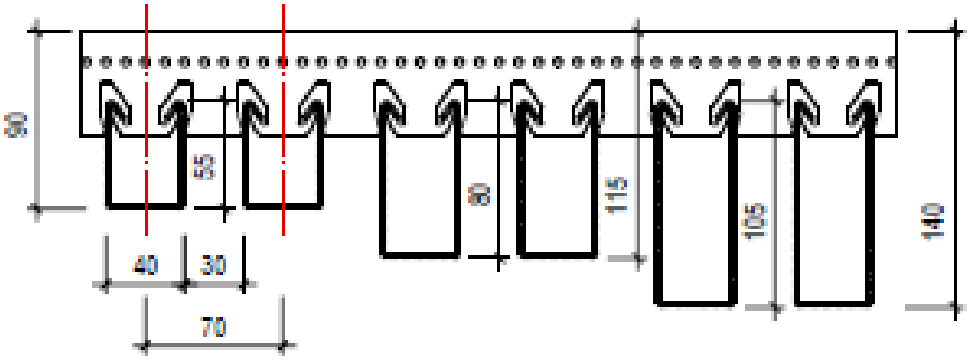
Technical drawing



Module 50



Module 100



Panel 1 40x55mm *Panel 1 40x80mm* *Panel 1 40x105mm*

2. Panels

- Dimension 40x55mm, 40x80mm and 40x105mm (bxh) with the upper flanges pointing inward (Panel type 1). The panels are supported by the prongs on the inner corner of the flanges and not by the edges of the flanges.
- Minimum panel length 1000mm. Maximum panel length 6000mm. *Note: it is recommended to provide support for panels >4500mm during installation or demounting.*

3. Carriers

- 0.95mm aluminium
- Available in transparent coated 7178 or black 1863
- Modules from 50mm to 200mm in 10mm increments
- Carrier length ca 5,-m (exact length depending in module)

Article code	Description	Length
332075	HeartFelt AL carrier 1 M50	4995 mm
332076	HeartFelt AL carrier 1 M60	4975 mm
332077	HeartFelt AL carrier 1 M70	4965 mm
332078	HeartFelt AL carrier 1 M80	4955 mm
332079	HeartFelt AL carrier 1 M90	4945 mm
332080	HeartFelt AL carrier 1 M100	4995 mm
332081	HeartFelt AL carrier 1 M110	4945 mm
332082	HeartFelt AL carrier 1 M120	4915 mm

332083	HeartFelt AL carrier 1 M130	4935 mm
332084	HeartFelt AL carrier 1 M140	4895 mm
332085	HeartFelt AL carrier 1 M150	4945 mm
332086	HeartFelt AL carrier 1 M160	4955 mm
332087	HeartFelt AL carrier 1 M170	4925 mm
332088	HeartFelt AL carrier 1 M180	4855 mm
332089	HeartFelt AL carrier 1 M190	4935 mm
332090	HeartFelt AL carrier 1 M200	4995 mm

4. **Accessories**
   - Panel splices, transparent coated 7178.
     Note: Panel splicing is independent from carrier position!
   - Carrier splices, transparent coated 7178 or black 1863.
   - End caps from 6mm felt material in the same colours as the panels
   - Hangers:
     - Standard rod hanger with suspension adjustment spring
     - Gripple® wire hangers for island configurations or ceilings with bigger modules (not standard)
5. **Spans**
   - Panel span (ctc distance of the carriers): 1200mm
   - Panel cantilever (distance from panel end to 1st carrier): 150mm
   - Carrier span (ctc distance of the hangers): 1500mm
   - Carrier cantilever (distance from carrier end to 1st hanger): 300mm
6. **Properties**
   - Unique revolutionary product. Up till now, not existing in the ceiling market
   - Based on proprietary and patented technology
   - Has a “soft” look and creates a warm and comfortable ambiance
   - In module 100mm suited for use in CCA (Concrete Core Activated) buildings
   - Acoustic performance comparable to similar aluminium perforated ceilings with non-woven acoustic tissue and open joints
   - Easy push-in installation of the panels. Installation of the system similar to linear aluminium ceilings. Demounting panels by peel-off from the prong
   - No special tools required. If necessary, panels can be cut-to-size on site with just a sharp knife
   - Light weight system:

Module	Weight kg/m² (40x55mm panel)
100mm	1.5 kg/m²
90mm	1.6 kg/m²
80mm	1.8 kg/m²
70mm	2.0 kg/m²
60mm	2.3 kg/m²
50mm	2.7 kg/m²

   - High impact resistance of the panels. Not easily damaged. However, the ceiling is not suited for use in sport hall applications where ball impact resistance is required

7. **Fire properties**
   Reaction to fire classification according EN 13501-1: Class B,s1,d0 (both grey and earth-tone colours)

8. **Acoustical properties**

55mm high panel

Module	α_w	NRC	SAA
100 mm	0.45(H)	0.44	0.44
90mm	0.45(H)	0.40	0.46
80 mm	0.50(H)	0.45	0.50
70 mm	0.60(H)	0.50	0.57
70mm (20mm mw pads on top)	1.00	0.95	0.96
60mm	0.65(H)	0.55	0.62
50 mm	0.70(H)	0.70	0.70

80mm high panel

Module	α_w	NRC	SAA
150 mm	0.40(H)		0.37
100 mm	0.45(H)		0.45
90 mm	0.45(H)		0.47
80 mm	0.50(H)		0.50

105mm high panel

Module	α_w	NRC	SAA
200 mm	0.40(H)		0.38
150 mm	0.45(H)		0.42
120 mm	0.50(H)		0.47
110 mm	0.50(H)		0.48
100 mm	0.50(H)		0.50

Mix 55-80-105mm panel

Module	α_w	NRC	SAA
80 mm	0.55(H)		0.53

9. **Application/ intended use**
   HeartFelt® Linear felt ceilings are designed as suspended ceilings for interior applications and can be used in exposure classes A and B according Table 8 of EN 13964:2014.

Other characteristics

Emissions to indoor air:

Regulation or protocol	Conclusion	Version of regulation or protocol
French VOC Regulation		Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
French CMR components	Pass	Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
AgBB	Pass	AgBB of February 2015. DIBt of October 2010
Belgian Regulation	Pass	Royal decree of May 2015 (C-2014/24239)
Indoor Air Comfort®	Pass	Indoor Air Comfort 5.3a of March 2015
Indoor Air Comfort GOLD®	Pass	Indoor Air Comfort GOLD 5.3a of March 2015
EN 717-1§	E1	2004
BREEAM International	Compliant	GN22: BREEAM Recognised Schemes for VOC Emissions from Building Products
LEED v4 (outside U.S.)	Compliant	LEED v4 for Building Design and Construction (April, 2015)

Regulation or protocol	Conclusion	Version of regulation or protocol
M1	Pass	M1 Protocol of January 2015

REACH Regulation (EU/1907/2006):

- does not contain any substances mentioned in the candidate list of SVHC substances or which are mentioned in Annex XIV or Annex XVII of the regulation.
- HeartFelt® Linear felt is not subjected to the requirement to supply REACH information to downstream users.

C2C certification:

- HeartFelt® Linear felt ceiling is made from a single material (virgin PES fibres) without any finishes.
  The carriers are made from coated material (aluminium) and can easily be re-used or for 100% recycled. The hangers are made from galvanised steel and can either be re-used or for 100% recycled. Cradle to Cradle Certified™ Bronze for the complete system has been awarded[2].

  http://www.c2ccertified.org/products/scorecard/ceiling-systems-hunter-douglas-europe-b.v

[2] *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.

Oekotex® Confidence in Textiles - Standard 100 – Tested for harmful substances certification:

- The Trevira CS fibres are already Ökotex Standard 100 certified (product class I, babies and small children up to the age of 3 year). Certificate 12.0.03665, validity date 31 March 2019.
- Ökotex Standard 100 certification for product class IV (furnishing materials for decorative purposes) for the HeartFelt® panels. Certificate 170.0.2004, valid till 28 February 2019.

Sundahus certification:

- The HeartFelt® Linear felt ceiling is a class A product according the Swedish Sundahus Miljödata classification.

Byggvarubedömningen certification:

- The Swedish BVB certification has been applied for and is pending

Greenguard by UL Laboratories

- The GREENGUARD Certification Program (formerly known as GREENGUARD Indoor Air Quality Certification) gives assurance that products designed for use in indoor spaces meet strict chemical emissions limits, which contribute to the creation of healthier interiors.
  - UL 2818 - 2013 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings, certificate valid till 16 February 2019.
  - UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings, certificate valid till 16 February 2019.

Staining/ Clean ability/ Dirt retention[3]:

- The tested colour (7599 Anthracite) has a high resistance to staining by chlorinated water (colour comparison after 1 hour exposure to 50mg active chlorine per litre water)
- Clean ability tests with standardised pollutions and different cleaning agents shows that HeartFelt® Linear felt ceilings has (wet) cleaning characteristics that are at least at par or better than aluminium ceilings (plain strip 0280). Moderate to strong fuzzing/ pilling may occur depending on the number of rubbings applied. Scratching of the aluminium material occurs when exposed to the same treatment.
- Dirt retention with standard pollutions on HeartFelt material, compared with plain aluminium, is ca 5-8 higher (weight-to-weight) after shake-off.

[3] All test results are based on comparison of the change in colour/ surface of original (nontreated/ exposed) samples to tested samples.

Bacterial growth/ fungal growth:

- Depending on bacterial strain the material may/ may not show a propensity to bacterial growth. We advise to consult with the client concerning the bacterial strain(s) that is (are) relevant for the project and need to be tested.
- The felt material does not show any visual or microscopic fungal sporulation or growth.

Maintenance:

- Heartfelt® Linear felt ceilings can be dry-cleaned with a feather duster or by vacuuming the panels.
- If necessary panels can be wet cleaned with plain water or cleaning agents (see above).

Light reflection according EN 410:

Colour	Reflectance_SOLAR (%)	Reflectance_VIS (%)
7575 (crème)	46.7	39.4
7576 (light brown)	33.8	28.3
7577 (medium brown)	24.1	17.5
7578 (dark brown)	20.6	13.3
7579 (umber)	15.7	9.5
7593 (white)	59.7	60.7
7595 (off white)	44.3	44.4
7596 (light grey	32.2	31.8
7597 (medium grey)	20.3	20.6
7598 (dark grey)	8.9	8.5
7599 (anthracite)	6.1	5.8
7594 (black)	3.6	3.5

Colour fastness to artificial light according ISO 105-B02:2014:

Colour	Colour fastness	Colour	Colour fastness
7595 (off white)	8	7575 (crème)	7
7596 (light grey	8	7576 (light brown	7
7597 (medium grey)	8	7577 (medium brown)	7
7598 (dark grey)	8	7578 (dark brown)	7
7599 (anthracite)	8	7579 (umber)	7