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Technical Data Sheet - Vertical Balustrade Infill Cables

About the cable infill

TECNI designed its Standard Vertical Wire Balustrade system with 3mm cable both for strength and aesthetic appeal with minimal maintenance. The majority of the fitting sits inside the top and bottom metal rails to minimise disruption of views.

Suitability and Compliance with Standards

Balustrade Cable Infill Loads: The balustrade cable infill correctly installed at maximum 80mm spacings between each cable have been tested to meet the loading requirements stated in BS 6399-1 Table 4 - Minimum horizontal imposed loads for parapets, barriers and balustrades, etc. A(i) and (ii), B(iii), (iv) and (v), C3(viii) and (ix). Cable infill: Cable infill is designed for a uniformly distributed load of 1.0 kN/m^2 (220 pounds per square metre approximately) plus a point load of 0.5 kN (110 pounds approximately). (See Appendix A for more details). Please ensure the railing framework is in compliance with the relevant standard.

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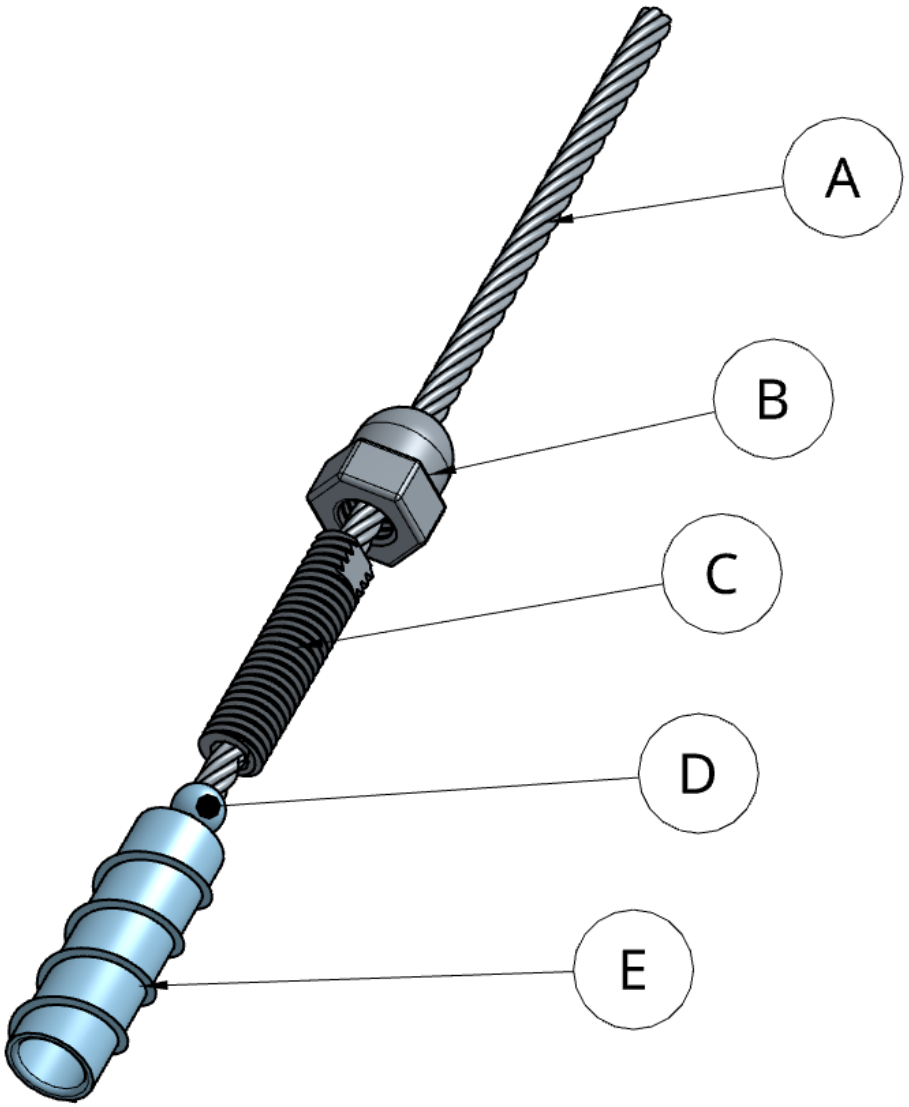
TECNI Assembly Part 160.125.003 - each end for Wooden Posts
TECNI Assembly Part 160.225.003 - each end for Metal Posts
TECNI Assembly Part 160.225.003 - one end for Metal Posts & one end for Wooden Posts



A	**3mm Stainless Strand**
B	**Stainless M8 Dome Nut**
C	**Stainless M8 Tension Fitting**
D	**Stainless Swage Ball Fitting**
E	**Female Insert (M8 Female) for Wooden Posts**

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Installation tools required

1 x Drill
1 x 6mm Spanner to tension balustrade fitting into post
1 x 13mm Spanner to tighten and lock off the dome nut

* 1 x 8mm Allen Key
* 1 x 12mm Drill Bit (12mm hole for female threaded insert fitting)

* Only required for wood insert fitting

Installation Options

The cable assemblies are supplied ready assembled from our factory for installation into wooden or metal posts. Recommended installation tools are shown below (not supplied).

12mm Wood Drill Bit (only required for wood insert version)

8mm Allen Key (only required for wood insert version)

6.8mm HSS Metal Drill Bit

M8x1.25 Tap

Drill Sizes for Wood

For wood insert use a 12mm diameter wood drill for the female threaded insert. Minimum Drill depth into wood = 37mm. This allows clearance for the stop ferrule at the end of the thread. Screw female insert into the wood using a 8mm a/f Allen Key.

Drill Sizes for Metal

For metal use a 6.8mm diameter drill and tap the metal M8x1.25 standard metric pitch. Minimum wall thickness for direct thread tapping is 5mm otherwise use M8 rivnuts in a thinner box section or tube.

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FAQS

What measurement do I need to give to get cable assemblies manufactured?

Measure the inside faces of the top and bottom rail that you want to infill with the cables - Dimension “L” see Figure 1 below.

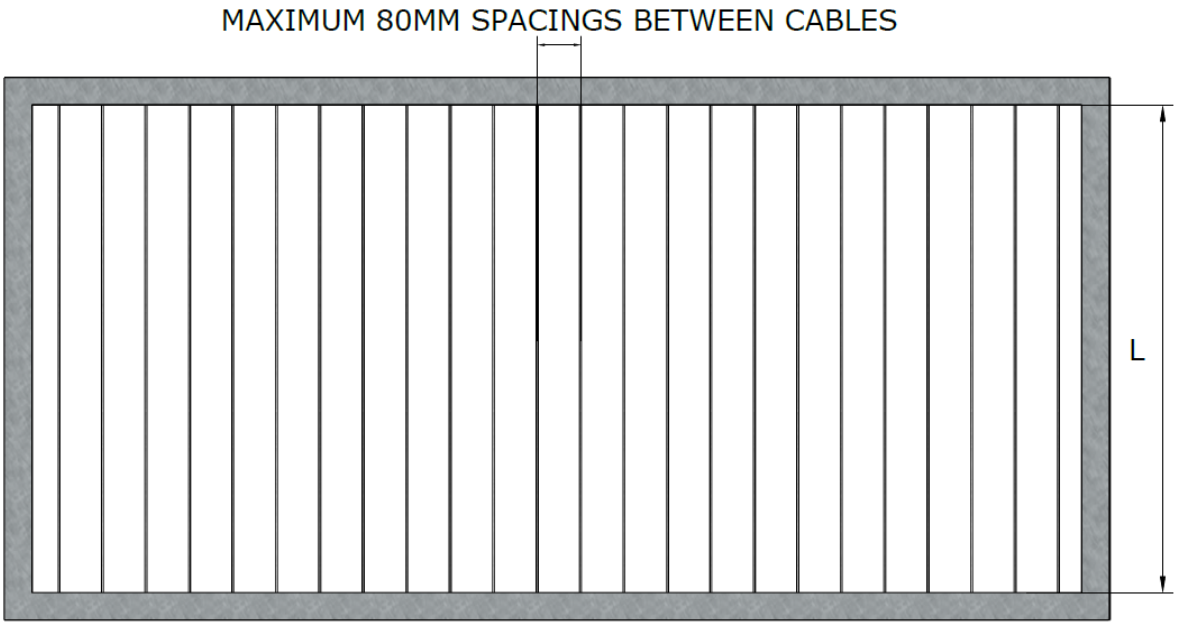

FIGURE 1

How much tension is sufficient?

The infill cables are designed for a maximum infill opening height of 1 metre. Tension the cables to ensure that the gap between two cables cannot be deflected to more than 95mm. This will compensate for any constructional stretch over time that could increase the deflection to the 100mm allowable limit. There is no need to tension the cables more than this.

How do I tension the cables?

Wind the stainless tension fitting (part C above) into the wood insert for wooden material or the pre-tapped M8 hole/M8 Rivet Nut in steel material as equally as possible each end until sufficient tension is achieved. Don’t try to twist the cable, just the tension fitting. Lock off the tensioned fittings using the M8 Dome Nut.

What are the maximum spacings allowed between cables?

Due to natural deflection of wire, TECNI recommends **maximum spacings of 80mm** between vertical wires.

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For installation into wooden posts, use the female wood insert supplied. Drill a 12mm hole to a minimum of 37mm depth and screw the insert into the wood using a 8mm allen key until the top of the insert is flush with the top of the rail. The additional drill depth is to allow for clearance of the stop ferrule above the threaded terminal.

For installation into hollow section metal posts ensure that there is sufficient M8x1.25 female metric thread to engage as much thread as possible but at least three full threads. If this cannot be achieved then you should use an M8 rivnut in compatible material for the post i.e. brass or stainless for stainless posts or zinc plated for galvanised posts.

How much tension is in each cable?

When tensioned to allow a maximum deflection of 95mm between cables at the central point there is approximately 80 kgf (0.78 kN) in each cable.

How strong is each cable?

Each TECNI factory manufactured assembly has a tensile strength in excess of 300 kgf 2.94kN).

Will the cables stretch?

There will be minimal constructional stretch in each cable but this will not produce a noticeable slackening of the cables in lengths up to 1 metre.

Long term maintenance

All the components are manufactured from highly corrosion resistant materials. Maintenance is minimal. Simply wash with soap and water if necessary and if required, the cables can easily be re-tensioned in just a few minutes without specialist tooling.

What is the maximum thread depth that can go into an M8 dome nut?

11mm

Appendix A Extract from BS 6399-1 Table 4

Minimum Horizontal imposed loads for parapets, barriers and balustrades, etc.

Type of occupancy for part of the building or structure	Examples of specific use	Horizontal uniformly distributed line load (kN/m)	A uniformly distributed load applied to the infill (kN/m2)	A point load applied to part of the infill (kN)
A Domestic and residential activities	(i) All areas within or serving exclusively one [A1] single family [A1] dwelling including stairs, landings, etc but excluding external balconies and edges of roofs (see C3 ix)	0.36	0.5	0.25
	(ii) Other residential, (but also see C)	0.74	1.0	0.5
B and E Offices and work areas not included elsewhere including storage areas	(iii) Light access stairs and gangways not more than 600mm wide	0.22	N/A	N/A
	(iv) Light pedestrian traffic routes in industrial and storage buildings except designated escape routes	0.36	0.5	0.25
	(v) Areas not susceptible to overcrowding in office and institutional buildings also industrial and storage buildings except as given above	0.74	1.0	0.5
C3 Areas without obstacles for moving people and not susceptible to overcrowding	(viii) Stairs, landings, corridors, ramps	0.74	1.0	0.5
	(ix) External balconies and edges of roofs. Footways and pavements within building curtilage adjacent to basement/sunken areas	0.74	1.0	0.5