

NP 101E

Greater strength and elongation characteristics make Belden messengered cable the cable of choice.



Stranded vs. Solid Messenger Cable for Broadband Applications

The Cable TV industry has long used messenger cable for aerial runs between a pole (or strand) and a subscriber's house. In this type of application, a messenger wire strength member is added, to allow the cable to support its own weight, as well as to withstand high winds or the loading of ice.

A cable break will clearly cause a service outage, although such an outage is easy to trouble-shoot.

In an overly-stretched cable, the coaxial conductor itself will become stressed, leading to changes in its electrical properties and poor signal transmission. These signal transmission problems can be difficult and frustrating to trouble-shoot.

Background

When any cable is suspended aerially between two points, a sag results. The amount of the sag is a function of many factors:

- the length of the span
- the weight of the cable
- the amount of loading due to wind or ice
- other physical properties of the cable.

Because of this, an overly-stretched cable can create more complex problems than a simple cable break.

Enough sag must be allowed to take into account these factors. As the length of the span increases, or the load due to wind or ice increases, a cable of increasing breaking strength must be selected.

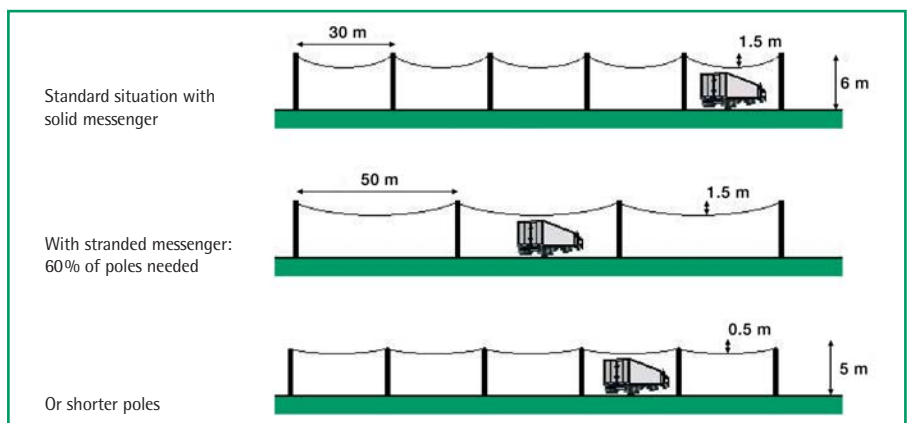
Messenger Cable Construction

Solid or stranded messenger wire, shown at the top of the cable, provides the strength needed for the cable to run a span.

If a cable, that has insufficient strength or the potential for excessive elongation is in-stalled, it will break or stretch.

Stranded Messenger Wire

The stranded messenger cables are designed to improve the sags (details shown in below table) with the result to run longer distances or to use shorter poles:



Product Availability:

	RG 6			RG 11			
Item	9117M	49057M	49050M	1524M	49006M	49031M	49047M
Name		H125	PRG7		PRG11	Coax 4	Coax 3
Messenger Type	1.3 solid	2.0 strand	2.0 strand	1.8 solid	2.5 strand	3.0 strand	3.3 strand
Cable O.D. in mm	7	7	7.1	10.3	10.3	14	20
Cable Strength (kN)	1.2	4.2	4.2	2.35	4.9	8.6	8.4
Min. Temperature (degr C)	-40	-40	-40	-40	-40	-40	-40
Max. Temperature (degr C)	+70	+70	+70	+70	+70	+70	+70
LIGHT Climatic Conditions¹							
Wind Velocity (gust speed – km/h)	132	132	132	132	132	132	132
Ice Thickness (mm) ³	33	33	33	35	36	38	43
Span by Sag	0.5 m – EDS ²						
	12.5	24.0	24.0	17.0	28.0	35.0	30.0
1.0 m	18.0	33.0	33.0	24.5	40.0	49.0	43.0
2.0 m	25.0	47.0	47.0	34.5	57.0	70.0	61.0
2.5 m	28.0	52.0	52.0	38.5	63.0	78.0	68.0
10.0 m	–	93.0	93.0	–	111.0	135.0	120.0
15.0 m	–	110.0	110.0	–	132.0	160.0	144.0
HEAVY Climatic Conditions¹							
Wind Velocity (gust speed – km/h)	167	167	167	167	167	167	167
Ice Thickness (mm) ³	64	65	65	66	67	70	75
Span by Sag	0.5 m – EDS ²						
	6.2	11.8	11.8	9.0	14.3	17.6	17.6
1.0 m	8.8	16.6	16.6	12.6	20.0	25.0	25.0
2.0 m	12.5	23.3	23.3	18.0	28.5	35.3	35.3
2.5 m	14.0	26.0	26.0	20.0	31.5	39.5	39.5
10.0 m	–	–	–	–	56.0	71.0	71.0
15.0 m	–	–	–	–	62.0	82.0	82.0

¹ according EN50341.3.4/VDE210

² Every-Day-Stress condition, maximum sag can be larger if a bigger sag is allowed, larger spans can be achieved

³ Cable thickness including ice layer

