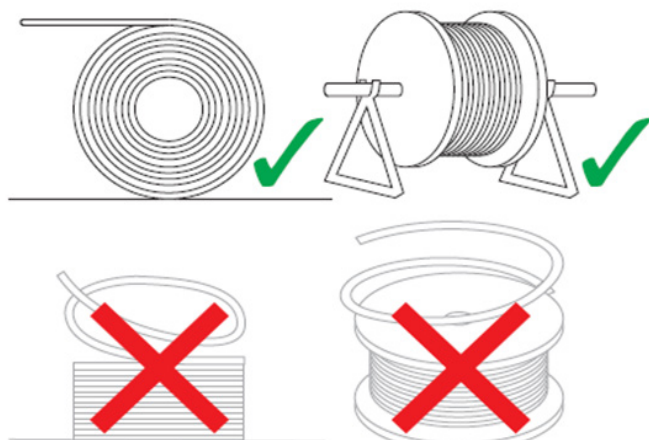


7 Guidelines for cable installation

The proper installation of a cable is key to get the maximum performance and service life. Simple, easy-to-follow guidelines can make the difference between thousands and millions of cycles of service life. In this guide, review 7 quick rules for proper cable installation in your next application.

Before installation, many professionals and cable manufacturers will claim that it is necessary to allow for at least 24 hours for cables to be “relaxed,” or “shaken out.” Relaxation time is a luxury these days – most engineers are faced with increasingly tight deadlines, reduced resources, and a multitude of different responsibilities. We relax to de-stress from hectic work and family lives. Likewise, many manufacturers recommend cables to be relaxed for installation to release stress from storage on a spool or reel before installation.

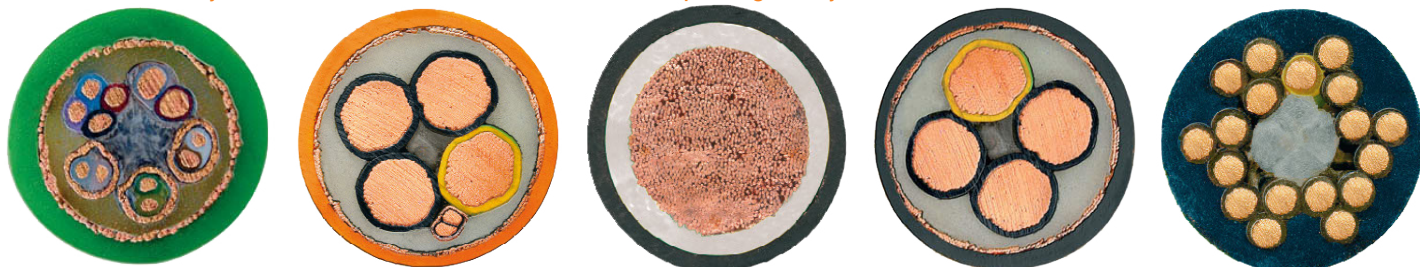
To allow for more relaxation time for the engineers and installation team, the igus® cable experts agree that a [Chainflex® cable](#) should be cut to the desired length and installed directly into a cable carrier. Our 25 years of experience in cable manufacturing and installation allows us the confidence to say that if properly designed ([see the 7 seven key design features of a continuous-flex cable here](#)), it is not necessary to waste time laying or hanging cables before their installation. Instead, use the following guide to ensure the performance of your cables quickly and easily.



Always allow spools to roll during unspooling.

1. Unspool cables properly- always allow spools to roll while unspooling cables. Do not pull cables from the flange, or uncoil from the top of the spool. This can cause unnecessary stress to cables.
2. Check the jacket materials of different cables - in some instances, different jacket materials can stick together and cause abrasion. Check to see if your cables’ jacket materials are intended for use inside a cable carrier, or for use with corresponding jacket materials. Abrasion of jacket materials can sometimes be prevented with interior separation.

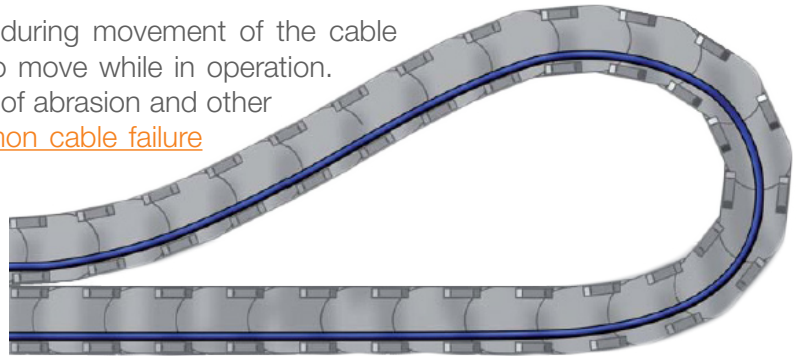
Ensure that different jacket materials are intended for use with corresponding cable jackets.



3. Cut to the proper length, and lay directly inside the cable carrier. Ensure each cable is long enough for proper connection and strain-relief (see guideline #7). Laying cables is the preferred method for placing inside a cable carrier, especially [cables that have already been harnessed with connectors](#). Cables can also be carefully pulled into the proper positioning in the cable carrier if necessary. Avoid any twisting of the cable while placing into the carrier.

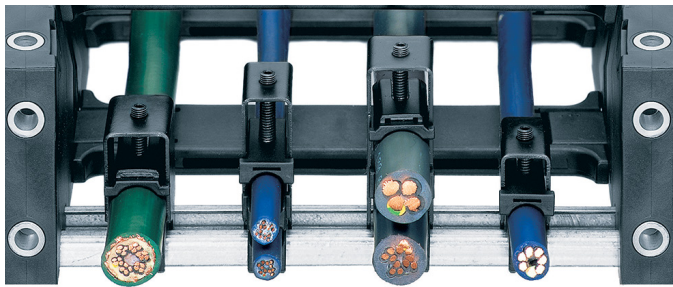
4. Ensure every cable has room to move freely during movement of the cable carrier. Be sure each cable has plenty of room to move while in operation. This will maximize the service life, and reduce risk of abrasion and other common cable failures. ([Learn more about common cable failure modes here](#))

5. Take the time to be sure that cables rest in the neutral axis of the cable carrier, especially while operating at the carrier's maximum bend radius. When the carrier is bent, there should be no tensile forces exerted on the cable.



Be sure the cable rests in the carrier's neutral axis.

6. If cables/hoses of varying diameters are being installed, utilize interior shelving or separators. This will prevent tangling. There are two easy cable distribution rules to follow to see if interior separation is needed. The first states that if the diameters of the cables, $D1+D2$ are greater than $1.2 \times$ the inner height of the cable carrier, no separation between the two cables/hoses is necessary. If the diameters of cables $D1+D2$ is less than or equal to the inner height of the cable carrier, use vertical separators or horizontal shelf to prevent crossover/abrasion. more resilient material will gradually wear down the softer jacket, leading to failure.



Use strain-relief at both ends of cables.

7. Use strain relief at both ends of cables. There are a number of strain relief options, including mounting brackets, tie wrap plates, etc. Proper strain relief keeps the length of cable inside the carrier fixed at all times. In certain cases, strain relief may only be necessary at the moving end of the cable carrier.

To learn more about Chainflex® continuous-flex cables or for questions about your individual application, contact the igus® cable experts directly via email at chainflex@igus.com or by calling 800.521.2747.

