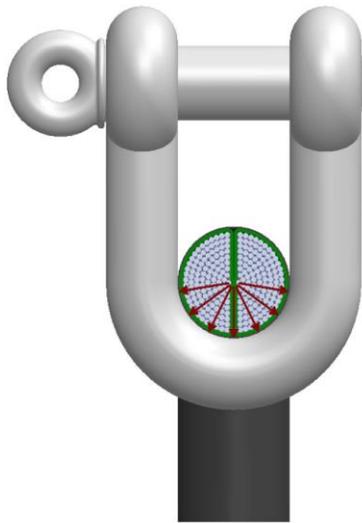


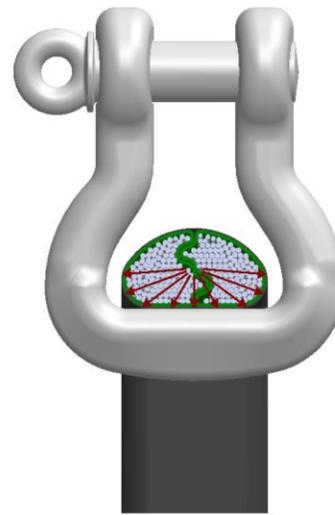
Technical Bulletin 54: Cover Bursts Beneath Tapers

When a Twin-Path® High Performance Roundsling or any other roundsling is put under tension, there is a tendency for the load-bearing fibers to move as close to the contact point of the hardware as is possible, and to spread out to fill the available width. When a sling is used on a contact point where the full width of the sling can spread out there is little transverse load on the cover of the roundsling.

In practice there are often hardware or lifting points where the sling must be tapered to fit a narrow width. In these cases, a permanent wrap or removable pad is used to draw the width of the sling down to a usable profile. In this case, the core fibers will still tend to pull towards the contact point and out, but they are restrained by a combination of the width of the hardware and tapering material. If the sling is tapered narrower than the lifting point, then the full force of the core fibers is applied to the tapering material and the sling cover. This material must either stretch to accommodate the movement of the core yarns, or it will be pulled apart by them. This effect is exacerbated when there is any folding of the sling cover beneath the taper because this makes a point of increased pressure on the cover.



TAPERED SLING IN HARDWARE THAT SUPPORTS THE TAPERED DIAMETER



TAPERED SLING IN HARDWARE THAT DOES NOT SUPPORT THE TAPERED DIAMETER

In order to avoid this there are several steps that can be taken:

- Taper only when needed: If a taper is used when the width is not restrained by the lifting point, the full force is taken by the taper and the cover.
- Use temporary tapers instead of permanent: When a sling has permanent tapers, there is a tendency to rig on them even if not necessary.
- Move temporary tapers periodically: By changing the bearing points approximately every 20 lifts, the wear on one part of the cover is minimized.
- Smooth cover before tapering: Removing folds and wrinkles from the cover before the sling is tapered reduces areas of concentrated force that may cause bursts.