CASE STUDY

National Science Foundation - Cable Splice Cover

PROBLEM:

The Arctic Neutrino Detection program "IceCube" cable splicing problem required cables 1.5 miles long to be easily fed down drill holes. Due to the limited "on-ice" time and -40°C operating conditions, the solution needed to add cable splice protection, improve splice visibility, and ease splice installation.

SOLUTION:

A specialized low-temperature containment jacket was required to reduce installation time, increase splice reliability, ease cable handling, and facilitate tube entry. The jacket would have to be highly visible, remain flexible at the -40°C installation temperatures, be easy to close with glove covered hands, and add the needed mechanical protection to the cable splices.

CONCLUSION:

Zippertubing produced a customized variation of Zip-Wrap (VNH) to address all of the customer's installation problems. The low temperature VNH-23 jacketing combined with foam padding provided protection and support for the fragile cable and sensors. A large zipper, wide Velcro attachments, and high visibility red color met the usability requirements for the installation team. Utilizing these custom covers allowed the installation team to install the entire array of detectors during the limited deployment window in this harsh climate.