


# Demonstrating Field Installable Success

At Multilink, we value the end result of our products and the success of our customers. Our equipment is regularly checked for proper functionality to deliver quality and all our products are inspected before leaving our facility. Connector stability in the field is a priority for us. With this in mind, we performed both internal and 3rd party testing (per Telcordia GR-3120-CORE) to provide the highest guarantee of quality. The following tests are designed to assure minimal insertion loss through a variety of extreme situations for Field Installables.

## Performance Testing

Maintaining a minimal insertion loss is key to providing the quality we expect from our products. An approved third party testing facility provided the evaluations below to specify the average insertion loss at ambient conditions. We are proud of the performance of our H IP Compression Field Installables.

### Performance Test per Telcordia 3120-CORE

**Insertion Loss Result**

| Test Type | Performance | |
|---|---|---|
| Fiber | 1310 Average | 1550 Average |
| Flat | 0.20 | 0.27 |
| ROC | 0.36 | 0.40 |
| Round | 0.42 | 0.43 |

## Thermal Age Testing

The Multilink H IP Connectors are designed to meet specified requirements under extreme conditions. To test their ability to withstand the high heat levels in some regions, these connectors were placed in a chamber and exposed to air temperatures of 85C° for seven days and then immediately tested for insertion loss.

### Thermal Age Test per Telcordia 3120-CORE

**Insertion Loss Result**

| Test Type | Thermal Age | | | | | |
|---|---|---|---|---|---|---|
| Fiber | (Pre-Test) 1310 Average | (Post-Test) 1310 Average | Change (Average) | (Pre-Test) 1550 Average | (Post-Test) 1550 Average | Change (Average) |
| Flat | 0.20 | 0.43 | 0.23 | 0.27 | 0.34 | 0.08 |
| ROC | 0.36 | 0.51 | 0.15 | 0.40 | 0.41 | 0.00 |
| Round | 0.42 | 0.62 | 0.20 | 0.43 | 0.51 | 0.08 |

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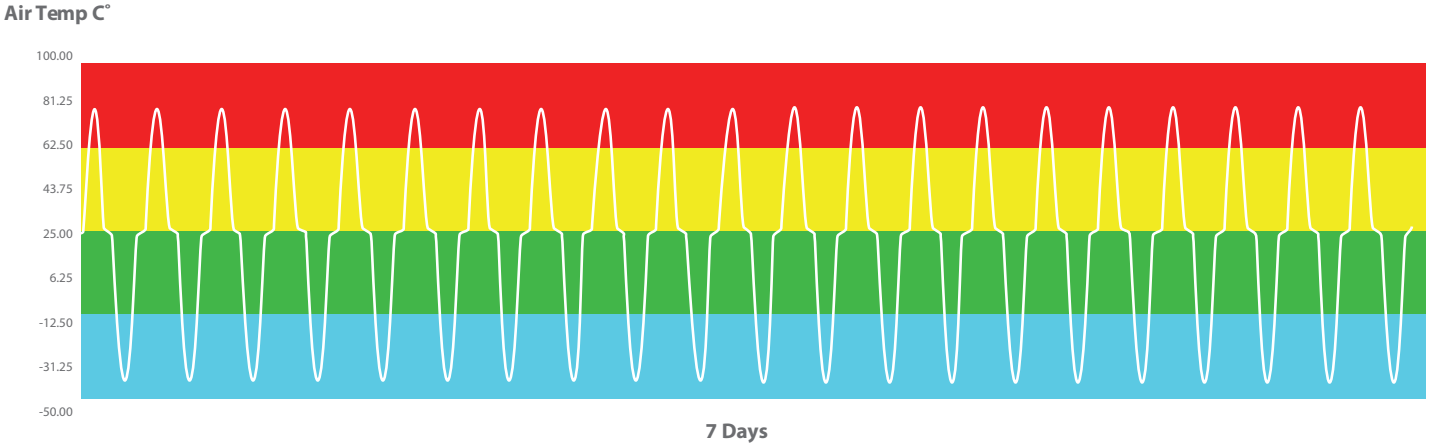
## Thermal Cycle Testing

H IP Connectors are exposed, not only to extreme heat in the field, but extreme cold as well. To measure insertion loss in our Field Installables with Flat, ROC and Round cables throughout the thermal cycle, the following 7-day test was completed. Temperatures ranging from -40C° to 75C° throughout the cycle produced minimal insertion loss. The results speak for themselves.

### Thermal Cycle Test per Telcordia 3120-CORE

**Insertion Loss Result**

| Test Type | Thermal Cycle | | | | | |
|---|---|---|---|---|---|---|
| **Fiber** | **Max (Average) 1310** | **Min (Average) 1310** | **Delta 1310** | **Max (Average) 1550** | **Min (Average) 1550** | **Delta 1550** |
| Flat | 0.18 | -0.10 | 0.28 | 0.10 | -0.10 | 0.20 |
| ROC | 0.05 | -0.10 | 0.14 | 0.09 | -0.11 | 0.21 |
| Round | 0.22 | -0.14 | 0.37 | 0.26 | -0.13 | 0.39 |



# Humidity Age Testing

Moisture is an issue for any cable connection if it is not properly designed. Multilink's H IP Field Installables are equipped to meet standards through humidity testing. Samples evaluated for insertion loss were tested through a humidity period of 7 days at 70C° and 100% RH. The average humidity in tropic regions is between 77%-88%.

## Humidity Age Test per Telcordia 3120-CORE

**Insertion Loss Result**

| Test Type | Humidity Cycle | | | | | |
|---|---|---|---|---|---|---|
| **Fiber** | **Max (Average) 1310** | **Min (Average) 1310** | **Delta 1310** | **Max (Average) 1550** | **Min (Average) 1550** | **Delta 1550** |
| Flat | 0.04 | -0.06 | 0.10 | -0.02 | -0.04 | 0.03 |
| ROC | 0.04 | -0.03 | 0.07 | 0.03 | 0.00 | 0.03 |
| Round | 0.07 | -0.04 | 0.12 | 0.04 | 0.02 | 0.02 |

# Vibration Testing

As with all extreme conditions in the field, earthquakes, nearby explosions and strong winds can give any Field Installable a good shake. For testing, insertion loss is determined after a 2 hour/per axis (X, Y, and Z) vibration period is completed. Samples are then removed and evaluated.

## Vibration Test per Telcordia 3120-CORE

**Insertion Loss Result**

| Test Type | Vibration Period | | | | | |
|---|---|---|---|---|---|---|
| **Fiber** | **Max (Average) 1310** | **Min (Average) 1310** | **Delta 1310** | **Max (Average) 1550** | **Min(Average) 1550** | **Delta 1550** |
| Flat | 0.04 | -0.06 | 0.10 | -0.02 | -0.04 | 0.03 |
| ROC | 0.04 | -0.03 | 0.07 | 0.03 | 0.00 | 0.03 |
| Round | 0.07 | -0.04 | 0.12 | 0.04 | 0.02 | 0.02 |

# In-house Testing

We are committed to working together in pursuit of 100% customer satisfaction. Our exceptional reputation has allowed us to work with amazing companies and products. Many of these products have specific guidelines and qualifications that are required to meet compliance for their various industries. Our in-house testing facility has completed the following tests in accordance with Telcordia Standard 3120-CORE for our H IP Field Installable Connectors.

**Cable Flex Testing:** 90° flexing for 8 cycles

**Impact Testing:** 3 meters on 3 axis

**Torsion Testing:** 10 cycles of torsion

**Water Resistance Testing:** IP6X