

## Test 18 & 20

2 Bundles: four wires each (three BMS 42/1/1-20; one 3 BMS 42A/8/1-18)

Metal Shaving: Two Aluminum 7075 shavings placed -1 apart between bundles

Circuit Resistance: 1 Ohm

Generator: 3 phase, 400Hz, 120 line to neutral (208 line to line), 10kVA.

Observations	Test 18	Test 20
Flash	No	No
Strong Arcing	No	No
Circuit Breakers Tripped	No	No
Damage Length	0	0
# Wires Failing Wet Dielectric Test	0 of 8	0 of 8

These tests were similar to tests 17 & 19 except that aluminum 7075 shavings were used instead of steel shavings. One problem encountered was that, even with relatively thick shavings (i.e. 47 mils by 28 mils), the shaving tended to break and crumble when the two bundle were being made. Further, when the abrader was turned on, the remaining shavings tended to break and fall out of the bundles more frequently than steel shavings. However, in Test 20 one shaving stayed in the bundle for the full four hours of the test.

Damage caused by the shaving was mainly limited to the topcoat with some superficial damage to the Poly X layer (Figure 44). If the test was allowed to run longer it is possible that the shaving may have eventually abraded through to the conductor. However, in general when an aluminum shaving got into a position where it was forced into the insulation, it tended to break and was no longer an abrasion threat.