

POEP LIMITS

Terry Cobb

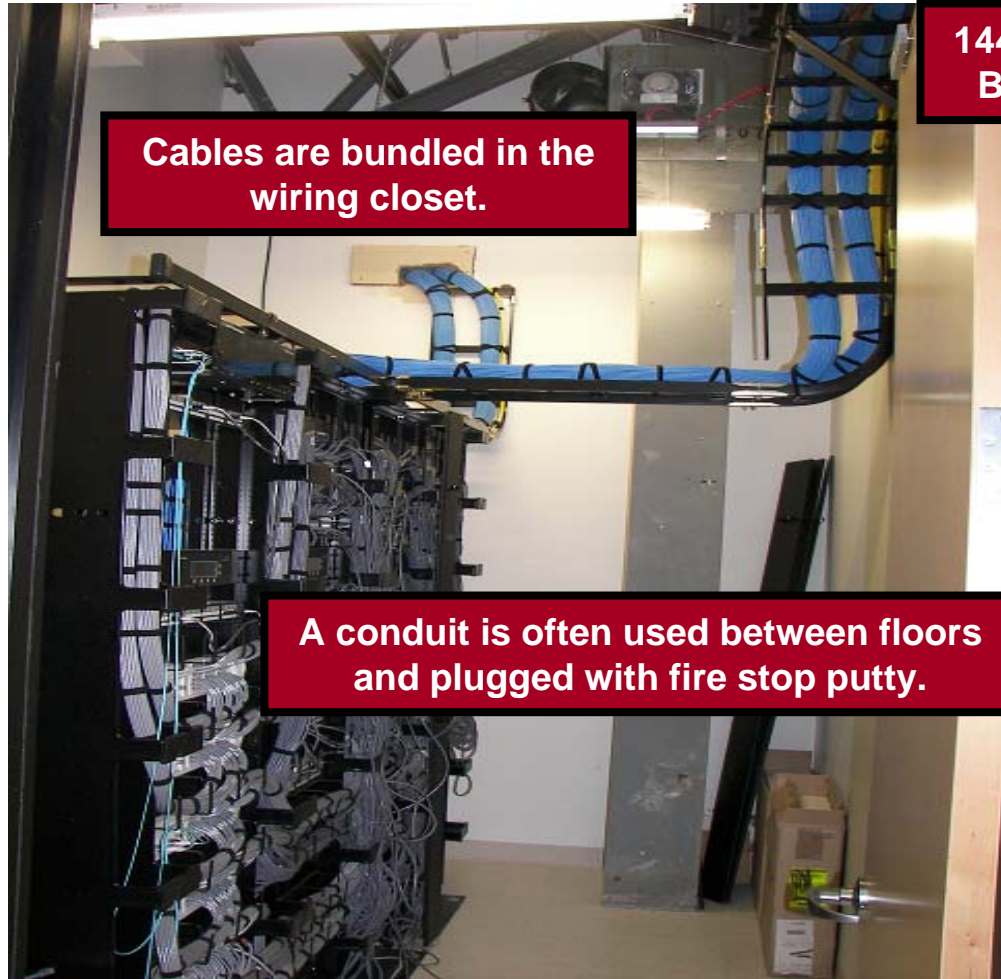
Frank Yang

SYSTIMAX SOLUTIONS

Test

- **A test was set up to measure the temperature rise for different loads with a 40 meter 36 cable bundle of Category 5e configured similar to a typical installation.**
- **The test was first conducted on 12 cables in the 36 cable bundle, then 24, and finally all 36 cables in the bundle.**
- **The results indicated that the worst test condition was with the cabling in a conduit and this lead to the testing of up to 144 cables inside a conduit.**
 - **Note: A 36 cable bundle is probably small when compared to actual installations.**

Wiring Closet

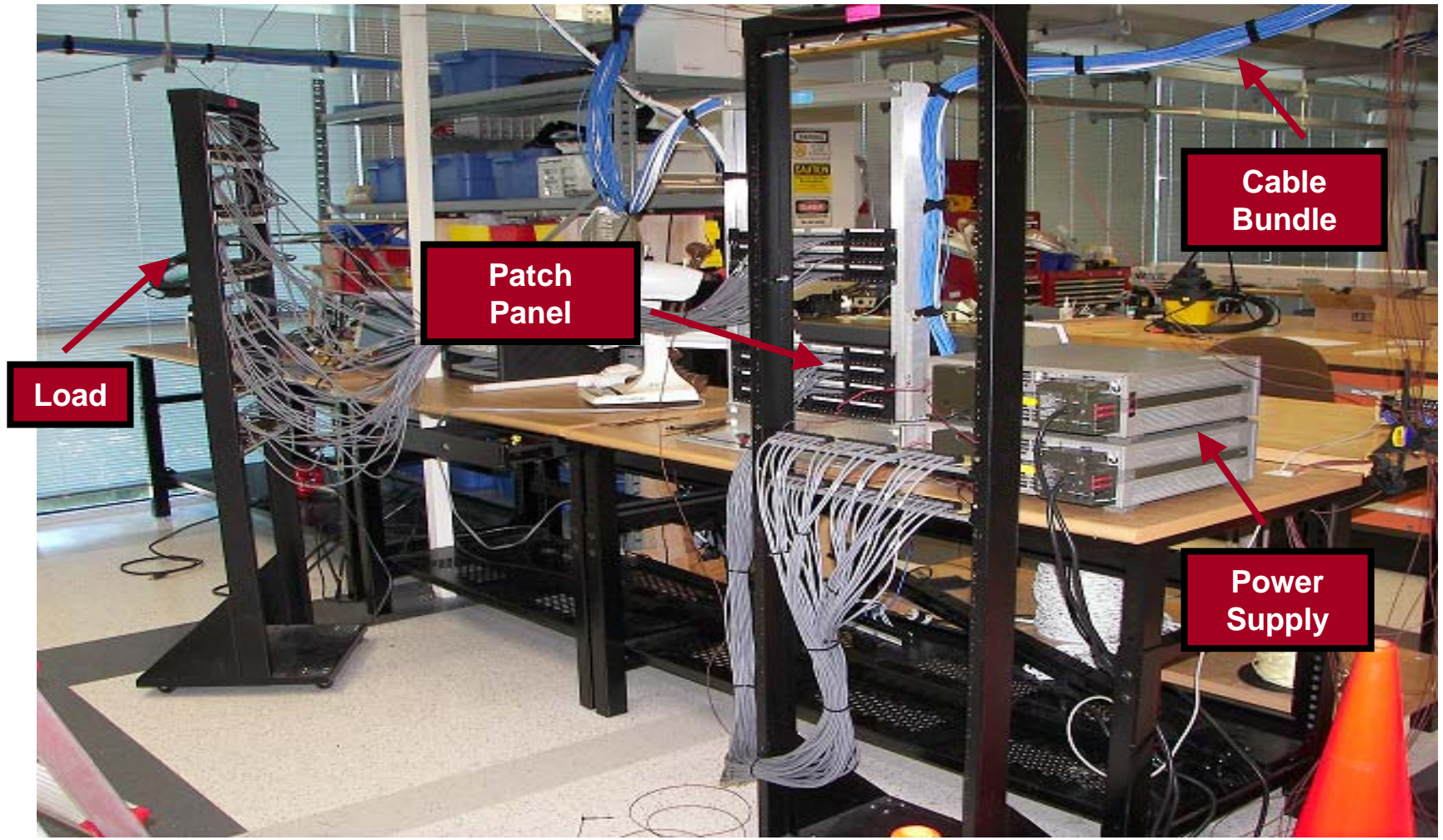


144 Cable Bundle

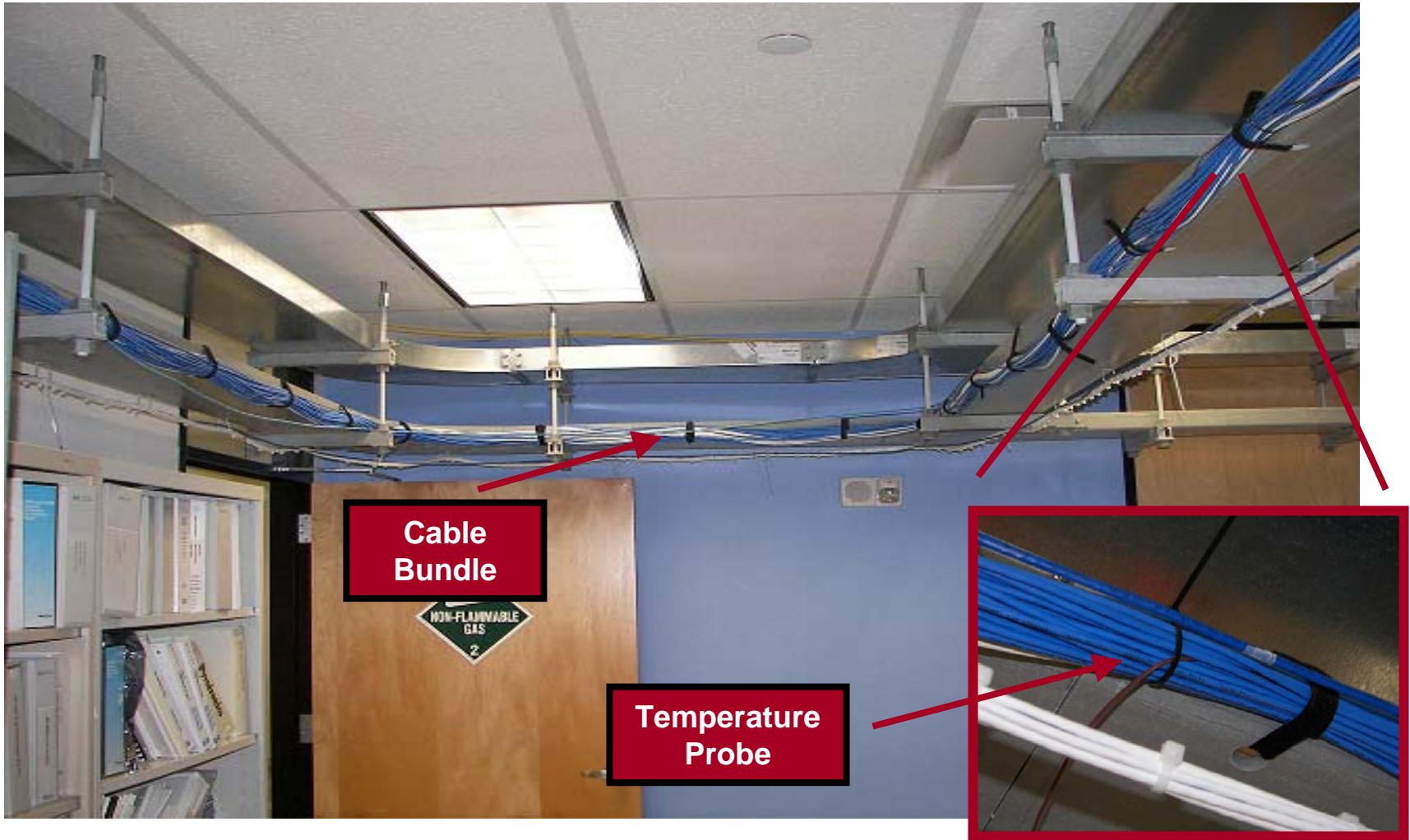
132 Cable Bundle



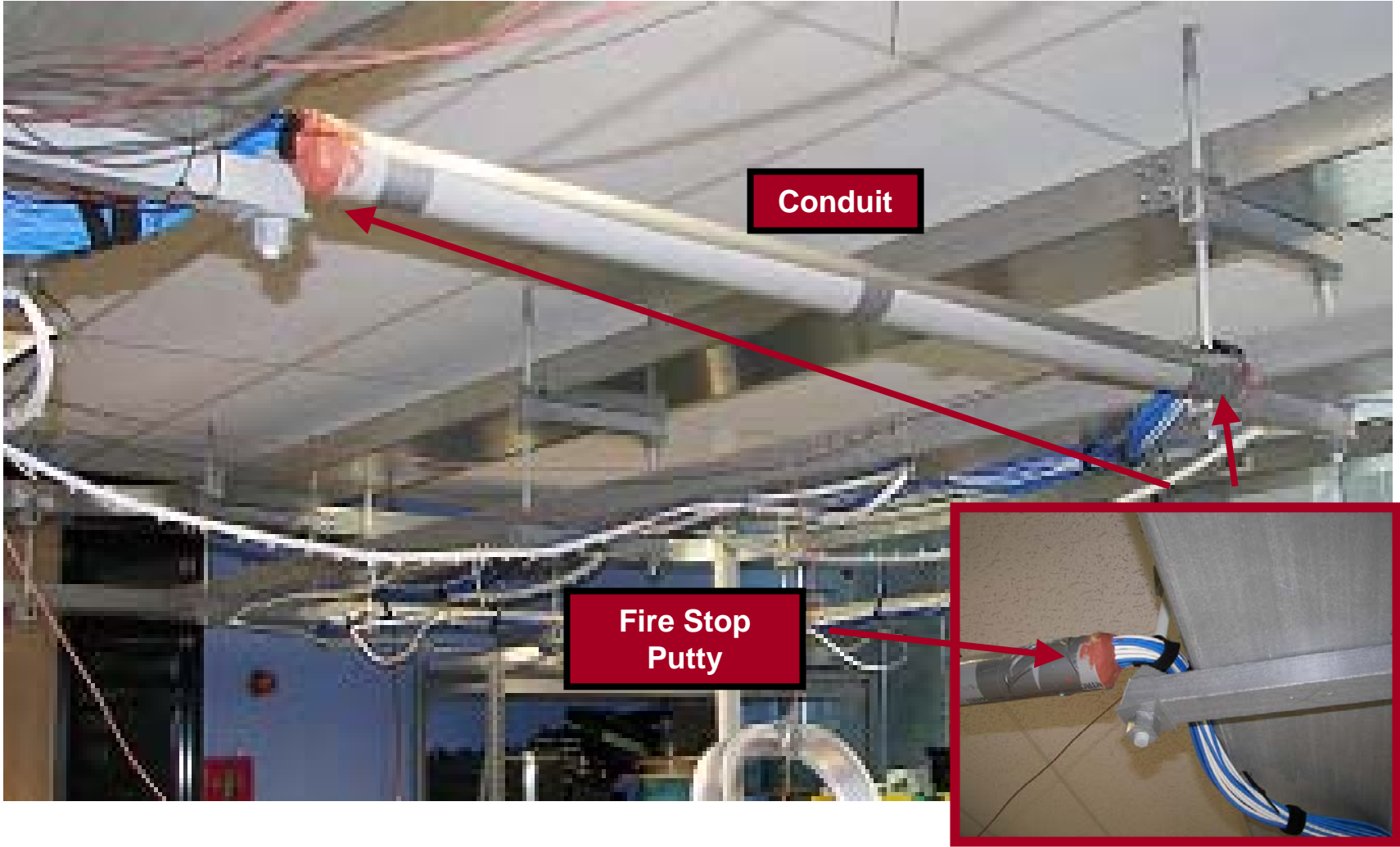
Test Set Up



Cabling



Conduit

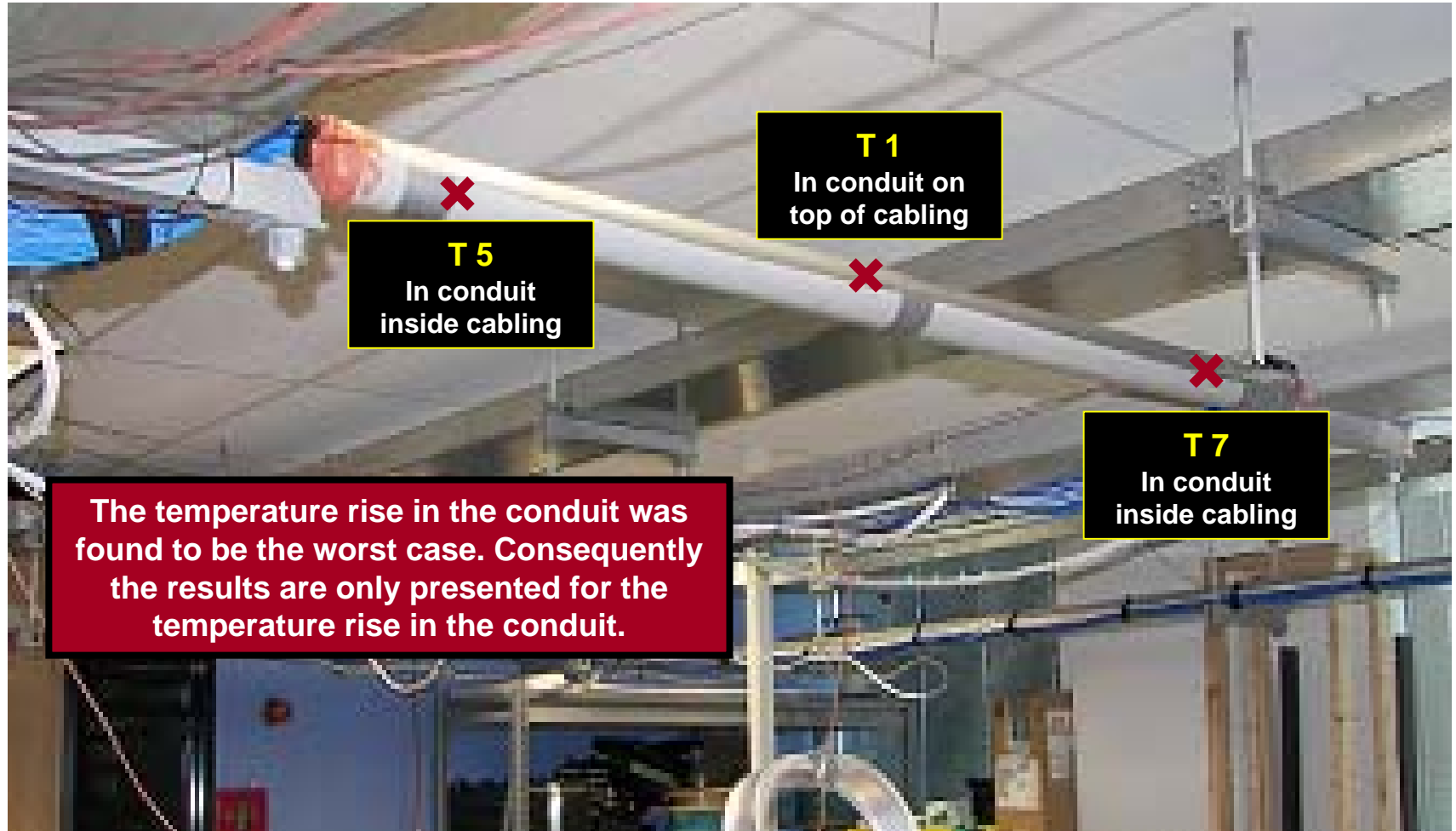


Conduit

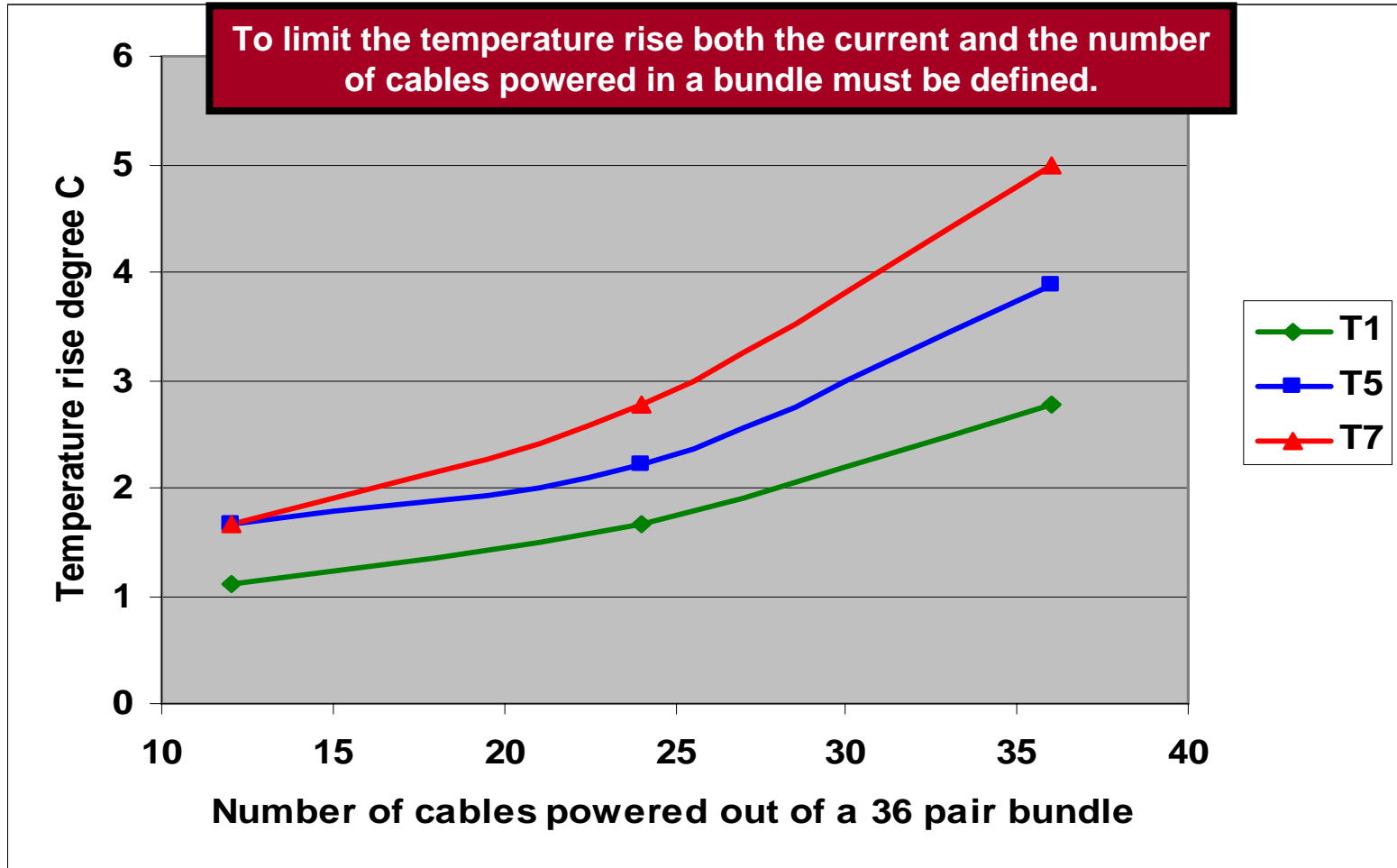
Fire Stop Putty



Temperature Probes Inside Conduit



Cat 5e 2 pair power 0.9 Amps per pair



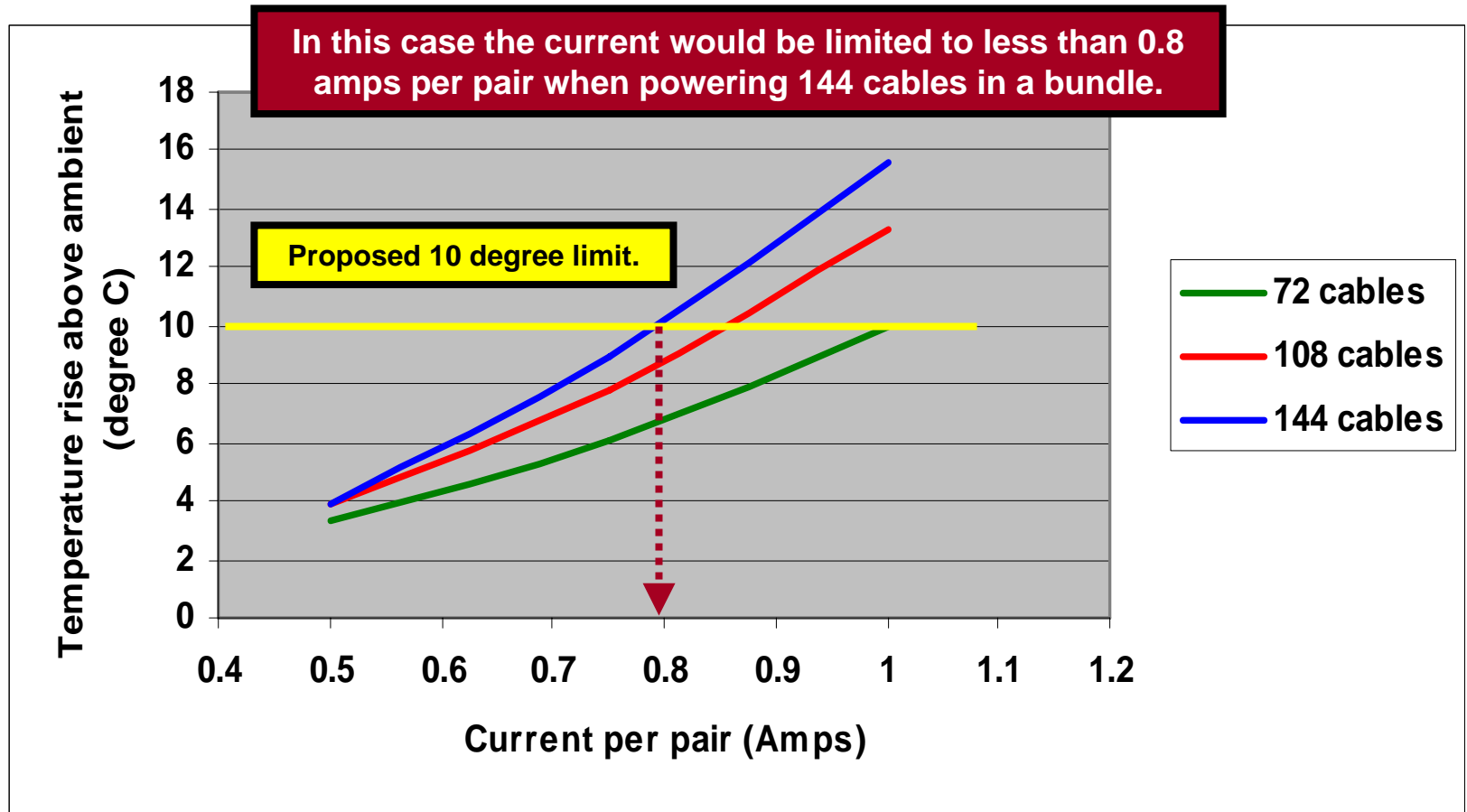
Test Set Up for large cable bundles

Three temperature probes were placed at the ends and center of the conduit inside the bundle. In the following slides only the center probe is used which was the worst case.

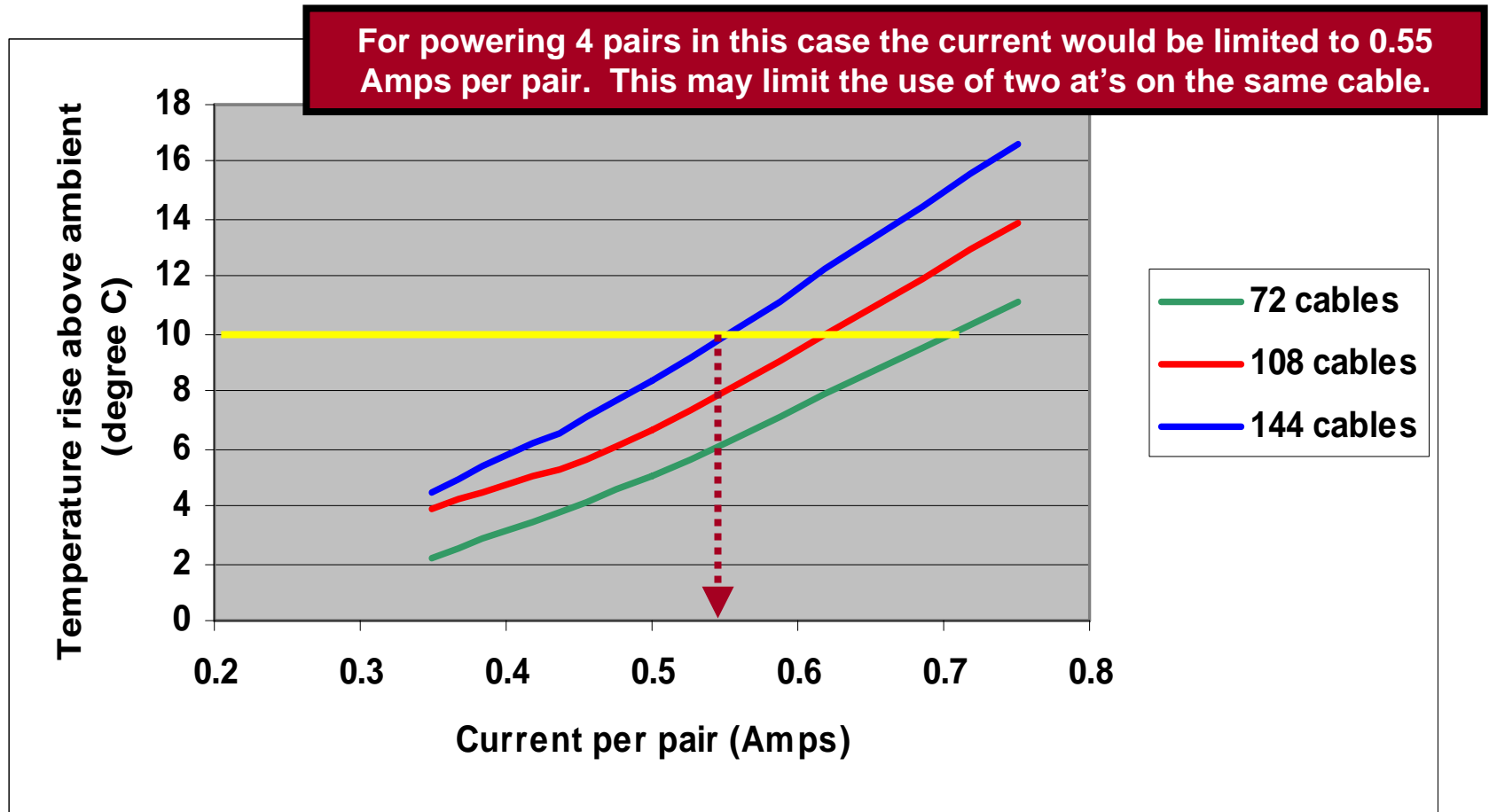
Conduit



Cat 5e 2 pair power 72, 108, and 144 cable bundle



Cat 5e 4 pair power 72, 108, and 144 cable bundle



Conclusion

- **Is testing in a conduit representative of worst case.**
- **Should a limit be placed on the number of cables that can be bundled or a maximum power based on the number of cables in a bundle.**
- **Since testing is done with all cables equally energized can the number of cables be increased since not all cables are at maximum power.**