

Network Cabling: Standards & Regulations

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Standards

- ANSI/TIA/EIA-568 (-A, -B, -C)
 - -A, -B, -C refer to *revisions* of the specification
 - -A: 1991 (e.g. “568A”)
 - -B: 1995 (e.g. “568B”)
 - -C: 2010 (mostly unknown so far!)
 - Set available from TIA for approx. USD1000
 - http://www.ampnetconnect.com/documents/568C0_C1_and_C3_Overview.pdf
- ISO/IEC 11801
 - Mostly harmonized with TIA/EIA-568, but not 100%
 - Set available from IEC or ISO for approx. CHF650

Standards, cont'd.

- Modular Jack vs. Registered Jack vs. USOC
 - Ethernet uses 8P8C Modular Jacks, *not* RJ45!
 - Defined in ISO/IEC 60603-7 as “8P8C Modular Connector”.
 - ANSI/TIA/EIA-1096-A and ISO/IEC-8877 both define the physical dimensions of the connector.
 - “RJ” indicates compliance with FCC 47 CFR Part 68 §502 (obsolete)
 - §502 is now privatized and maintained as TIA-968-A, which in turn now only includes the various connectors by reference to ANSI T1.TR.05-1999.
 - <http://www.part68.org/SecureDocuments/TIA-968-A-Final.pdf>
 - ANSI T1.TR.05-1999 is available from the ANSI store for USD225.
 - “RJ45” doesn't exist, and never has.
 - “RJ45S” is a USOC ordering code, for ordering data telecommunication circuits from AT&T.
- Everyone still calls it “RJ45” anyway... so why do I bother?

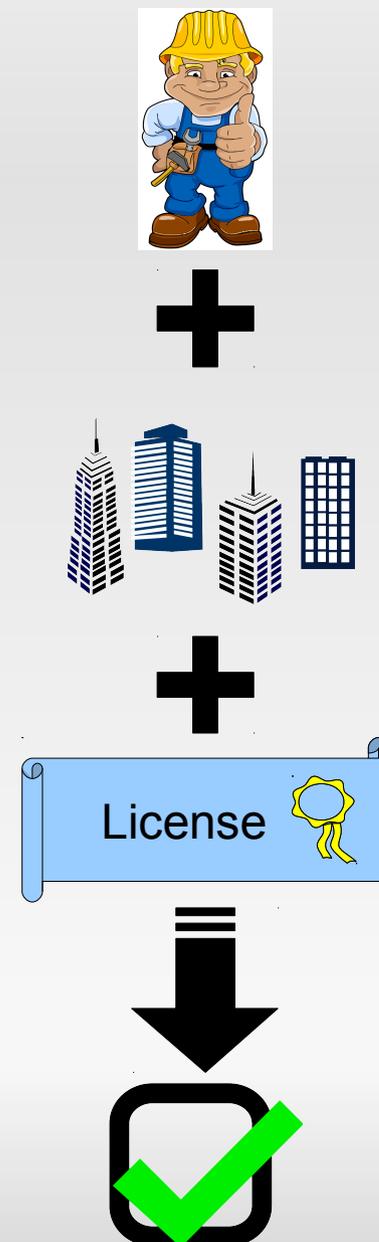
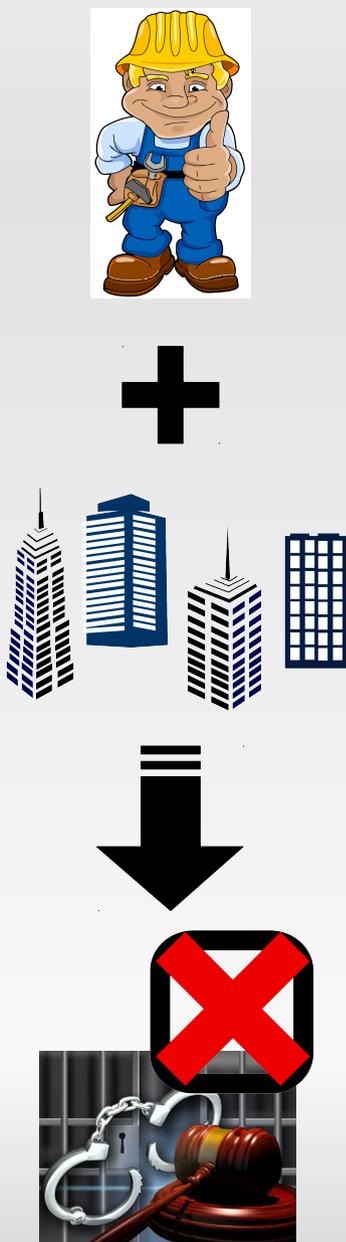
Standards, cont'd.

- ANSI/TIA/EIA-569
 - Covers “premise wiring and spaces”, a.k.a. Structured Cabling Systems
 - Raceways, conduits, etc.
 - Gradually being consolidated into 568-C standard.
- Manufacturer & Industry standards
 - AMP NETCONNECT (TEConnect)
 - IBDN / BIX (Belden)
 - KRONE (also TEConnect, originally European)

Legal

- ***I Am Not A Lawyer!***
 - Do your own research and seek your own independent legal advice if you are doing network cabling, *especially* in a business context.
- Every jurisdiction is different
- Manitoba has several laws that apply to network cabling
 - Electrical Safety / Licensing (discussed herein)
 - Consumer-Protection (not discussed)

Visual Summary



Local Laws & Regulations

- Canadian Electrical Code (§60, mostly)
 - Not available online (\$\$\$)
 - Covers “Communciation” systems
- Winnipeg Electrical By-Law
 - http://www.winnipeg.ca/ppd/pdf_files/2012%20ELECTRICAL%20BY-LAW.pdf
 - Modifies §60 of CEC
 - Refers to Certified Electricians, as defined by the Province of Manitoba

Local Laws & Regulation, cont'd

- The Apprenticeship and Certification Act
 - <http://web2.gov.mb.ca/laws/statutes/ccsm/a110e.php>
 - Enables remaining legislation, and establishes “Compulsory Certification Trades”
- The Electrician's Licensing Act
 - <http://web2.gov.mb.ca/laws/statutes/ccsm/e050e.php>
 - Applies to everyone in Manitoba
 - Enables ministerial Regulation:
- Electricians Licensing Regulation:
 - <http://web2.gov.mb.ca/laws/regs/pdf/e050-186.87r.pdf>

Do these laws apply to me?

- Anytime you use conduit!
- CCSM E50 §5(f) - “limited specialized trade”
 - very poorly-defined, unclear when required
- CCSM E50 186/87 R §2(2) - “Voice Data Video”
 - 2 years' employment & 3600 hours of related practical experience required to get “limited specialist license”
 - ...but “Voice Data Video” isn't defined anywhere!
- City of Winnipeg NOTICE:
 - <http://www.winnipeg.ca/ppd/electrical/pdf/AlarmVideoInstallers.pdf>
 - What constitutes an “installation”?

Do these laws apply to me, cont'd

- In short, data-only (i.e. “low voltage”) work that:
 - doesn't connect in any way to other electrical systems, *and*
 - doesn't run through conduit, *and*
 - isn't being installed in the City of Winnipeg

might be exempt from licensing requirements.
- You are **always personally** responsible for following applicable building codes, safety codes, and laws.