The SKM Power*Tools, GroundMat, and Cable-3D software has been developed in a formal manner by Registered Professional Engineers and includes extensive testing. Where possible, the results have been compared to benchmark calculations, and other known programs. Where appropriate, the programs follow processes and methods described in ANSI, IEC, and other recognized industry standards. In particular, the PTW Version 8.0.3.4 or above software complies with the recommended practices described in:

IEEE 399-1997: Recommended Practice for Industrial and Commercial Power Systems Analysis (Brown Book)
IEEE 141-1993: Recommended Practice for Electric Power Distribution for Industrial Plants (Red Book)
IEEE 241-1990 - IEEE Recommended Practice for Electric Power Systems in Commercial Buildings (Gray Book)
IEEE 242-2001: Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (Buff Book)
IEEE 519-2014 Standard: Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems
IEEE 551-2006: Recommended Practice for Calculating AC Short-Circuit Currents in Industrial and Commercial Power Systems (Violet Book)
IEEE 80-2000 Guide for Safety in AC Substation Grounding
IEC 479: Effects of current on human beings and livestock
IEEE 142-2007 - IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems
IEEE 1584 – 2018: Guide for Performing Arc-Flash Hazard Calculations
NFPA 70E – 2024: Standard for Electrical Safety in the Workplace
CSA-Z462 – Canadian Standards Association
NESC – National Electrical Safety Code
IEC 60909 – Short-circuit currents in three-phase AC systems
IEC 61363 – Electrical installations of ships and mobile and fixed offshore units
IEEE C37.5: IEEE Guide for Calculation of Fault Currents for Application of AC High-Voltage Circuit Breakers Rated on a Total Current Basis
IEEE C57.96: IEEE Guide for Loading Dry-Type Distribution and Power Transformers
IEEE C57.12.00: IEEE Standard for General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
UL 489: Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
Cable-3D:
Rifenburg, R.C. "Pipe Line Design for Pipe Type Feeders." IEEE -IAS December, 1953.
Bartanian, Sooki and Sandler, Arther N. "Cable Pulling Design for Practical Applications in Modern Refineries." IEEE-IAS May/June 1974.
Cyprus Wire & Cable Company, "UD Technical Manual" January 1974.

IEEE 3001.2-2017: IEEE Recommended Practice for Evaluating the Electrical Service Requirements of Industrial and Commercial Power Systems
IEEE 3002.2-2018: IEEE Recommended Practice for Conducting Load-Flow Studies and Analysis of Industrial and Commercial Power Systems
IEEE 3002.3-2018: IEEE Recommended Practice for Conducting Short-Circuit Studies and Analysis of Industrial and Commercial Power Systems
IEEE 3002.7-2018: IEEE Recommended Practice for Conducting Motor-Starting Studies and Analysis of Industrial and Commercial Power Systems

IEEE 3002.8-2018: IEEE Recommended Practice for Conducting Harmonic Studies and Analysis of Industrial and Commercial Power Systems
IEEE 3003.1-2019: IEEE Approved Draft Recommended Practice for the System Grounding of Industrial and Commercial Power Systems
IEEE 3004.1-2013: IEEE Recommended Practice for the Application of Instrument Transformers in Industrial and Commercial Power Systems
IEEE 3004.5-2014: IEEE Recommended Practice for the Application of Low-Voltage Circuit Breakers in Industrial and Commercial Power Systems
IEEE 3004.8-2016: IEEE Recommended Practice for Motor Protection in Industrial and Commercial Power Systems

SKM tests each new revision of our software using in-house testing and validation procedures. DAPPER and CAPTOR have been in public circulation for more than twenty years. A_FAULT, IEC_FAULT, I*SIM, and HI_WAVE have been in public circulation for more than fifteen years.

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*SKM Power*Tools - Chosen by the top 40 Electrical Engineering firms in the world.*