

NFPA Footwear: Design Requirements



PERFORMANCE REQUIREMENTS	NFPA 1971, 2013 Edition Structural and Proximity Fire Fighting
Components	Must consist of sole with heel; Upper with lining; Puncture resistant device; Insole; Ladder Shank or whole sole equivalent; Impact and compression-resistant toecap
Height	Minimum of 250mm (10in); Removable insoles shall not be removed; Thermal, physical and moisture protection continuous to within 2" of footwear top with exception of ½" around pull up holes that penetrate footwear from outside to inside; Height of thermal, physical and moisture protection no less than 10" when measured as described
Width of Heel	Footwear heel width shall be equal or > than width of sole at intersection of heel breast and sole bottom, excluding any calendar roll where present
Footwear Heel Breast	Heel breast not less than 13mm (1/2 in) or not more than 25 mm (1 in); Angle not less than 90° or more than 135°; Edges must measure 13mm (1/2 in) minimum from upper at any point
Puncture Resistant Device	Must cover maximum area of insole as specified in CSA Z195
Thread	Inherently flame resistant
Hardware and External Fittings	Free of rough spots; metal parts shall not penetrate from outside into liner or insole; No metal shall be used in construction or attachment of sole with heel to puncture-resistant device, insole, or upper
Sizing	Available in men's 5-16 and women's 5-10, including half sizes and a min of 3 widths; Full & half sizes accomplished by individual and unique men's and women's lasts; Dual sizing to cover both men and women not permitted
Performance Requirements Specified in ASTM F 2413	ASTM F 2413 Performance Requirements for Protective (Safety) Toe Caps Footwear, 2011 edition is referenced in several test requirements; it is used for impact, compression, and puncture resistance with exception that flex resistance to cracking be evaluated at 1,000,000 cycles