



Building Safety Division  
 (541) 388-5580  
 building@bendoregon.gov  
 710 NW Wall Street, Bend OR 97703

## AMBIENT AIR TEMPERATURES AND DRY BARREL LENGTHS FOR STRUCTURES REQUIRING FIRE SPRINKLER PROTECTION

### I. PURPOSE

To identify Ambient Air Temperature and Dry Barrel Length design minimums for structures requiring fire sprinkler protection built in the City of Bend.

### II. BACKGROUND

Identifying the Average Annual Extreme Minimum Temperature is used in both NFPA-13R 2022 Table 6.2.4.1 and NFPA-13D 2022 Table 8.2.6.1(a). The same methodology shall be used with NFPA-13 2016 Table 8.4.9.1 (a) and NFPA-13 2019 Table 15.3.1 (a).

### III. POLICY

Based on National Oceanic Atmospheric Administration data, the Average Annual Extreme Minimum Temperature in Bend is  $-6^{\circ}\text{F}$ . Using the  $-10^{\circ}\text{F}$  row of the tables referenced above, a 14-inch-long dry barrel length inside the insulation is required when exposed to  $40^{\circ}\text{F}$  inside temperature.

All structures designed in the City of Bend for which fire sprinklers are required, shall use  $-6^{\circ}\text{F}$  as the Average Annual Extreme Minimum Temperature.

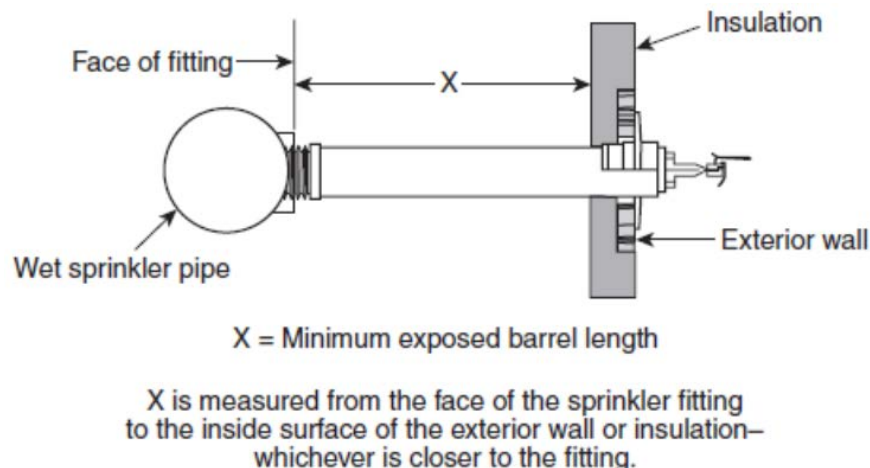


FIGURE A.8.4.9.1(a) Dry Sidewall Sprinkler Through Wall

### IV. REFERENCES

NFPA-13 2016, NFPA-13 2019, NFPA-13 2022, NFPA-13D 2022, and NFPA-13R 2022