



Sprinkler Testing Explanation

Appearance

NFPA 25 2023 Ed. Section 5.2.1.1 states that “sprinklers shall be inspected from the floor level annually” and sprinklers showing signs of leakage, detrimental corrosion, damage, loss of fluid, detrimental loading, or paint that was not applied by the manufacturer shall be replaced. Since this assessment takes place during the floor level inspection, Dyne does not offer additional appearance evaluation. However, pictures of each sprinkler sample are taken and provided in addition to their response time results. Any sprinklers with damage that renders the sample untestable will be brought to the attention of the customer.

Response Time

Dyne also tests the response time of the sprinklers to ensure the sprinklers will release in a specified amount of time when exposed to a defined temperature and air flow. The acceptable response time is based on a response time index (RTI). The RTI requirements are listed below. Note that a sprinkler coated with a material for corrosion resistance (wax for example) is allowed extra time as defined in UL 199. The response time of coated standard response sprinkler is 180 seconds or the maximum response time (whichever is greater).

Sprinkler	Definition
ESFR	RTI value less than 50 (meters-seconds) ^{1/2}
Fast Response	RTI value less than 65 (meters-seconds) ^{1/2}
Standard Response	RTI value less than 350 (meters-seconds) ^{1/2}

If the response time does not meet the RTI requirement, the sprinkler response time will be marked as “FAIL”. Additionally, sprinklers that failed to release due to the release mechanism not activating, the water seal not releasing, or pressure loss not being detected due to a blocked waterway will be marked as “FAIL” on the report. If a sprinkler fails to meet the response requirements as defined above, all sprinklers within the area represented by the failure shall be replaced per NFPA 25 2023 Ed. Section 5.3.1.3.

Dyne will also provide an image of the waterway following the response time test. The image of the sprinkler waterway post-testing can be used to help identify any obstructions that may still impede functionality.