



ARCMaster™ EFRT Grounding System



The ARCMaster™ has been designed by HMT to significantly reduce the likelihood of a rim fire caused by a lightning strike. This EFRT Grounding System provides multiple conduction paths for lightning induced electrical charges to be transmitted from the external floating roof to the tank shell and subsequently to the ground. The ARCMaster™ was designed by HMT in accordance with the recommendations of API RP 545.

If you would like to significantly reduce the likelihood of such a lightning induced rim fire, choose the HMT ARCMaster™ EFRT Grounding System.

Key benefits:

The ARCMaster™ relies on innovative design features that contribute key benefits to the end user:

- **Custom Designed — five components** — each designed to function in concert with one another to protect the AST from a lightning induced rim fire
- **Confirmed test results** — testing has been carried out by experts in the field confirming that this system will significantly reduce the likelihood of a rim fire caused by a lightning strike
- **Install** — installation is available by experienced HMT personnel
- **Low maintenance** — workhorse design and materials

THE ARCMaster™ EFRT GROUNDING SYSTEM DESIGN

HMT's ARCMaster™ design is made-up of five components which work together to dissipate the lightning charge, aid in the dissipation of any static build-up and eliminate electrical potential differentials between various tank parts. Here's how:

1. Submerged Lightning Conduction Path Shunts

Submerged Lightning Conduction Path Shunts, connecting the underside of the floating roof at the outer circumference of the roof to the tank shell, spaced around the perimeter of the roof. Shunts are used for conduction of fast and intermediate duration components of lightning stroke current.

2. Lightning Conduction Path Cables

Bypass conduction path cables are used for conduction of the intermediate and long duration component of lightning stroke current.

3. The HMT Scissor Shoe Seal

The Scissor Shoe Primary Mechanical Shoe Seal insulated from the floating roof to prevent a conduction path from the floating roof to the tank shell above the liquid surface.

4. A Secondary Seal System

A Wiper Type or SEAL KING™ Secondary Seal, insulated from the floating roof to prevent a conduction path from the floating roof to the tank shell above the liquid surface.

5. Insulated Seals

Insulated seals around the Gauge Pole wells and other such penetrations in the floating roof. API 545 says that there shall be no parallel conducting

paths from the floating roof to ground. Any non-fully submerged conductive seal assembly shall be electrically insulated.

DEFENDS AGAINST IGNITION BY A LIGHTNING STRIKE

The AST Industry and API recognize that the most effective defense against ignition by lightning is a tight fitting primary and secondary seal system. The ARCMaster™ is most effective with such properly fitting seal systems.

It is not possible to unconditionally state that a rim fire will never occur, given the considerable number of variables contributing to such an occurrence. However, this system will significantly reduce the likelihood of such a lightning induced rim fire.

Other key benefits

- Low maintenance
- Installed easily
- Quality materials
- Compatible with welded or riveted tanks
- Retrofit options available
- Designed by HMT in accordance with the recommendations of API RP 545

ABOUT HMT

HMT is the global leader in aboveground storage tank solutions. HMT's global team of engineers, project managers and field personnel can assist with common challenges including ways to reduce emissions, optimize tank capacity, reduce stranded inventory and engineer a tank system that exceeds safety standards and extends maintenance intervals.

HMT's full suite of tank products includes: External Seal Systems - Internal Seal Systems - Drain and Floating Suction Systems - Geodesic Domes - Skin and Pontoon IFRs - Full Contact IFRs - Emissions Reduction Devices

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