ARG® bonding device for floating roof tanks · KALOT Group

Moving roof, equal potential, no sustained arc

ARG®

How does ARG® work?

Lightning strike. A direct or nearby lightning strike drives current across the floating roof. The roof must pass this current, without arcing in the rim-seal vapour space, to the tank shell. 1

On the shell rim. ARG® mounts on the top shell rim with a side bracket; the reel sits on the inside, behind the handrail and away from the seal. 2

Dedicated bypass path. A 35×3 mm tinned copper braided tape, bolted to the roof, carries the intermediate and long-duration current with a resistance below 8 milliohms to the shell. Two SS304 spiral springs keep the tape taut at its shortest length. 3

Shunts alongside ARG®. Submerged shunts at 3 m intervals carry the initial (fast), high-peak part of the current, and ARG® beside them takes the long-duration load off the shunts. 4

Metal seal. When the roof and shell stay at nearly the same potential, the conditions for a sustained arc in the flammable vapour space disappear. 5

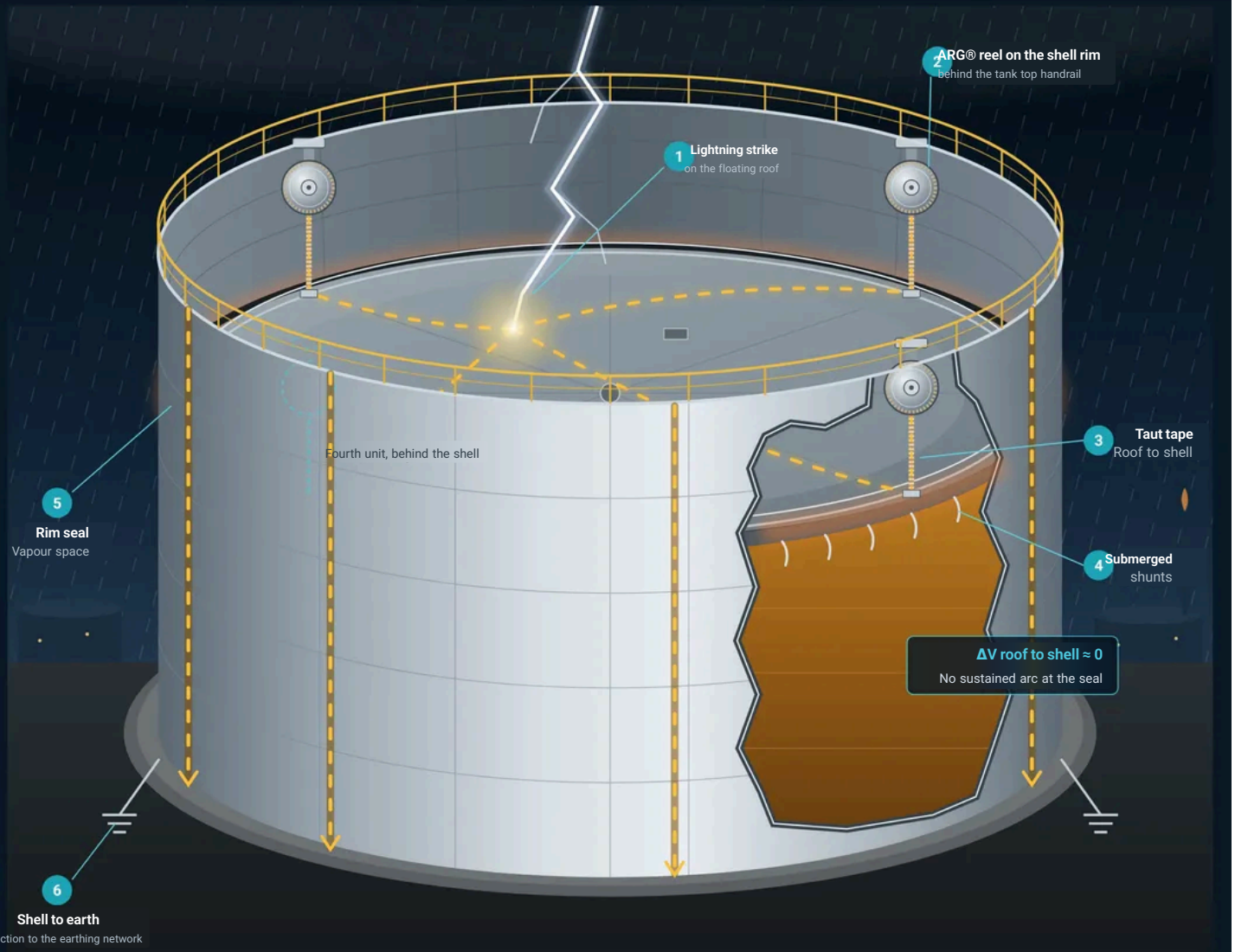
To earth. The tank shell carries the current to the tank earthing network. 6

Lightning current components: which path carries each part?



Conceptual waveform, not to scale. API RP 545 treats bypass conductors as the path for the intermediate and long-duration lightning current (clause 4.2.1.2.1).

Flammable vapour zone ARG® bypass path Lightning current



Cutaway view · 4 ARG® units at 90 degrees (tank circumference 91 to 120 m, e.g. 30 m diameter), one unit per 30 m of circumference · units drawn larger for clarity · not to scale

0 W
No power supply needed; two SS304 spiral springs · stainless steel reel 316L

18 · 20 · 25 m
Models ARG-18, ARG-20 and ARG-25 · tinned copper braided tape 35×3 mm · aluminium version on request

2 kA · 5 ms
Intermediate current test, per laboratory reports: no sparking

800 A · 1 s
Long-duration current test, per laboratory reports: no sparking and no excessive temperature rise

< 8 mΩ
End-to-end resistance when fully extended: about one quarter of the 30 milliohm API RP 545 limit for bypass conductors

Designed and manufactured by KALOT Group

Design basis: Iranian National Standard INSO 23828:2025