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	Breather Vent Overturn Protection ADR/EN Requirement and Compliance	**May 6, 2022**
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Description of Bulletin: This bulletin reviews the ADR/EN requirement for Breather Vent Overturn Protection and provides details on how the Betts Normal Vent complies with standard EN14595. This bulletin also highlights why the Betts Breather Vent is the best choice for the protection of a cargo tank.

Background: Breather vents are utilized to normalize internal tank vacuum and pressure which is critical to keep the cargo tank pressure within safe design limits. If the tank exceeds the pressure or vacuum design limits, a catastrophic failure of the tank shell could result and lead to complete and uncontrolled loss of the contents of the tank. It is Betts' position that the primary function of a vent should always be to protect the tank from over pressurization. Betts' unique weighted overturn block design satisfies the ADR/EN Overturn Protection requirement while also performing the duty of a Pressure Relief Device.

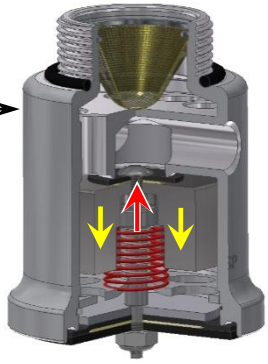
The ADR standard requires a breather vent to prevent the contents of a tank from spilling if the tank overturns. This requirement is quantified in standard EN14595:2016 by specifying an acceptable leak rate for the breather vent in the 90°, 180°, and 270° positions. A DN32 vent (with 1.25" mounting threads) has an acceptable air test leak rate of 5,760 mL/min. as specified in table A.5 of EN12266-1:1012.

Other manufacturers' breather vent designs utilize a shutoff disc or interference ball that makes the vents inoperable and does not protect the tank from over pressurization when the shutoff disc is engaged.

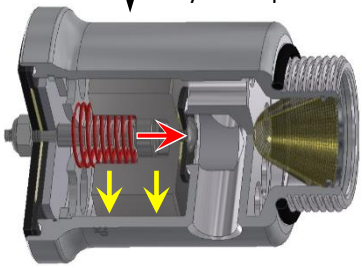
Summary:

1. **ADR overturn requirement is quantified in EN14595 standard by specifying a breather vent with 1.25" mounting threads must have an air leak rate less than 5,760 mL/min. in the 90°, 180°, and 270° positions.**
2. **The Betts Normal Vent satisfies the overturn seat tightness requirement per EN standards by increasing the set pressure of the vent and keeping the air leak rate less than 5,760 mL/min while continuing to operate as a pressure relief device.**
3. **Other designs, which utilize a shut-off disc or interference ball, disable the pressure relief function of the breather device and place the safety of the tank in jeopardy.**

Upright Position: Weighted block (yellow arrows) acts opposite the spring (outlined red arrow) and provides pressure set point.



90° & 270° Position: Weighted block (yellow arrows) rests on the vent body. Spring force (outlined red arrow) provides additional load and increases the set pressure to satisfy the leak rate requirement of EN14595 yet still provides pressure relief protection as needed.



180° Position: Weighted block (yellow arrows) acts with the spring force (outlined red arrow) and provides yet another level of additional load and increases the set pressure additionally to satisfy the leak rate requirement of EN14595. The vent still provides pressure relief protection as needed.