

RISSB product for prioritisation

Primary information	
Type of product being suggested:	Standard
Title of product being suggested:	Rail Shunting Vehicles
Date of suggestion:	February 2018
Reason for suggestion:	A standard which adequately covers rail shunting vehicles, especially battery-electric shunting vehicles, does not exist.
Railway discipline area:	Rolling stock, safety
Scope:	
<p>The standard would cover the design and manufacture as well as vehicle static and dynamic behaviour of vehicles designed for rail shunting operations, excluding locomotives. These are vehicles which are used to move rollingstock on light and/or heavy rail they may be diesel or battery powered and operated either in vehicle or by remote control. The vehicles may be able to on/off track or operate on rail only.</p> <p>Design and Construction The standard would cover elements of the vehicle design and construction of shunting vehicles. Some vehicles may be adapted from road vehicles in which case 7502 would adequately cover their design and construction. For other purpose-built rail shunting vehicles, the standard should cover minimum design qualifications and construction standards, noting that many of these vehicles may be built overseas.</p> <p>Performance The standard should outline minimum vehicle performance characteristics with regards to the vehicle's designed limits and operating environment. Performance requirements should be descriptive rather than prescriptive and should consider the track on which the vehicle is expected to operate and the rollingstock it is expected to shunt.</p> <p>Braking The standard should consider minimum requirements for safe braking. The requirements should consider the track environment and conditions as well as shunter only and air braked configurations.</p> <p>Vehicle Statics and Dynamics The standard should cover the statics and dynamics of the vehicle and should consider load cases for both shunting and free travel on rail. This should include analysis of track forces and axle loads in both shunting and free travel conditions.</p> <p>Wheels The standard should describe the necessary performance of the wheels or guidance equipment. The standard should not proscribe a wheel profile requirement as many battery powered shunters use a combination of small guidance wheels with rubber or other compounds for traction.</p> <p>Coupler The standard should describe minimum design requirements for any coupler attachment. The standard should define the possible load cases to be designed for.</p>	

<p>Operation and Maintenance</p> <p>The standard should describe minimum requirements for maintenance plans. This should include inspection of structural components such as couplers, wheels, suspension.</p> <p>The standard should also provide minimum requirements for operator manuals.</p>			
<p>Objective:</p> <p>The objective of the development of the new standard is to provide guidance to rail operators and providers of rail shunting equipment as to the safe operation and design of such equipment. Currently, for some vehicles derived from road vehicles 7502 provides some guidance as to the design. There does not exist any guidance for vehicles designed to operate on rail as shunt vehicles, especially for smaller battery powered shunt vehicles. In the absence of such guidance the operators of such equipment must rely on the advice of the equipment suppliers as to their safety and suitability for task.</p>			
<p>Hazard identification:</p>			
1	Insufficient braking performance or non-failsafe braking.	6	
2	Inadequate guidance equipment.	7	
3	Inadequate operator and maintenance manuals.	8	
4	Inadequate coupler performance.	9	
5		10	
<p>Benefits:</p>			
<p><u>Safety</u></p> <p>The standard could help to prevent dangerous shunting operations due to improper usage, design or maintenance of shunting vehicles.</p>			
<p><u>Interoperabilityⁱ / harmonisationⁱⁱ</u></p> <p>We would expect this product to be applicable and adopted nationally. Our organisation would seek to use the standard across all of the shunting vehicles that we supply. We would expect that this standard would operate alongside 7501 and 7503.</p>			
<p><u>Financial</u></p> <p>We expect that there would be a similar or slightly larger implementation cost than that of 7502. Once implemented we would expect to see cost savings in having homogenised requirements for shunting vehicles. Potential cost savings could be realised with better maintenance plans and operator requirements. Decreased risk of shunting accidents should also provide cost savings to industry.</p>			
<p><u>Environmental</u></p>			
<p>N/A</p>			
<p>Impacts:</p> <p>Difficulties in implementing this product could include:</p> <ul style="list-style-type: none"> • Difficulty and time developing the standard; • Agreement of interested parties in terms; • Time and difficulty adapting existing designs to this standard; and • Existing vehicles that may not meet the requirements of a new standard - especially for aging vehicles or when the supplier of vehicles is unknown. 			

ⁱ Interoperability - the ability of a process, system or a product to work with other process, systems or products (aka compatible systems through managed interfaces).

ⁱⁱ Harmonisation - the act of bringing into agreement so as to work effectively together (aka uniformity of systems).