Item 4
Adaptation of test procedure regarding class L drawbar eyes

Jan. 2014 the 17th

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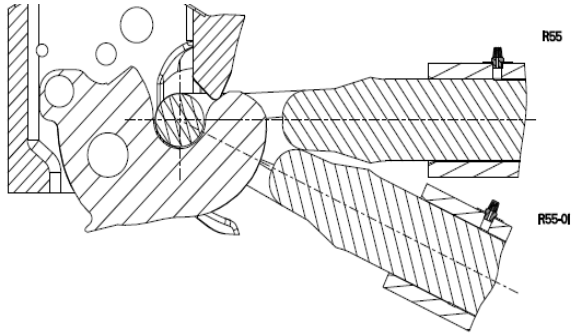
- **Situation:**

  - Request to adapt a test procedure relevant to couplings class K and L ,

  - It is defined in R55 some specific requirements to test the hook couplings (no specific requirements when trailer load is less then 3.5 T) and standard requirements for drawbar ring

Comments

- It is accepted to consider that the contact between the pin and the drawbar eye is not similar when coupled with a pin coupling or a hook coupling, the resultant stress and the damage zone are different,



- With the test specifications on the R55-01, it is specified a positive test load without any test on the both sides of the coupling (+/- F_v and +/- F_H),
- These specifications (test loads and conditions to apply the loads for tests) have no links to the mechanical contacts,
- These specifications are more severe than the standard used for Class C, D and S but not relevant to the use of the coupling,
- The main question is:
  - Why to make a difference in terms of loads conditions for tests and approval?

Product class	Test force	Mean value (KN)	Amplitude (KN)	Comments
Coupling and drawbars devices for hinged drawbars	Horizontal force	0	F_{hw} = +/-0,6 D	
Coupling and drawbars devices for central axle trailers (> 3.5T)	Horizontal force	0	F_h = +/-0,6 D_c	Vertical and horizontal loads are applied independently.
	Vertical force	S*g/1000	F_v = +/-0,6 V	
Coupling class K devices for hinged drawbars (§ 3.5.2.2 annex 6)	Horizontal force	0,475 D	F_{hw} = + 0,05 D + D	
Coupling class K devices for central axle trailers (§ 3.5.2.3 annex 6)	Horizontal force	0,475 $F_{hs\ res}$ + Angle between F_h and F_s	$F_{hs\ res} = (F_h^2+F_s^2)^{½}$ Where $F_{hs\ res}$ = + 0,05 $F_{hs\ res}$ + $F_{hs\ res}$	F_h = Dc
	Vertical force			F_s = S*g/1000+0,8*V

Proposal

- Our proposal should be to specify the same testings conditions (loads calculation and forces) for all the couplings and drawbars classes (class C/D; class K/L; class S/S, i.e. the couplings of class K shall be tested in the same manner as standard couplings,
- For both hook and pin couplings, we recommend:

  - To define tests conditions relevant to the use of the product
    - Alternative force in one direction for couplings < 3.5 T (report to § 3.1.1 annex 6)
    - Alternative force in both directions for couplings > 3.5 T,

  - To define similar force calculation (F_v and F_h), and application of forces, §3.3.3 and table 14

  - To suppress specific tests and load conditions dedicated to class K hook couplings ,

- For drawbar eyes:
  - To label the drawbar eyes for both applications (Class L and class S) with their relevant caracteristic values.

Example of label