



**FASTENING TECHNOLOGY**  
**TRAIN MANUFACTURING**

**RSB**<sup>®</sup> SOLUTIONS FOR TRAIN MANUFACTURING  
- Fire resistance requirements acc. to EN 45545-2:2020 -

**FASTENING TECHNOLOGY TRAIN MANUFACTURING**

THE NEW DIMENSION OF FASTENING TECHNOLOGY

Our RSB<sup>®</sup> team will be happy to advise you:

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## Our Fastening Systems for ,Train Manufacturing'

Whether it's in the suburban train, the freight wagon, the high-speed train or the slow train: fire protection is always and everywhere a "red-hot" issue. In this area of application, it is essential to use suitable products made of appropriate materials in order to guarantee passenger and rail vehicle safety. The flame resistant products of our well-known line of RSB® tube clamps are the ideal solution for the transport and railway market, ensuring improved safety and efficiency of rail vehicles.

<p><b>MULTICLAMPS</b> EN 45545-2:2020</p>	<p><b>MOUNTING RAILS &amp; TM-A</b></p>	<p><b>TUBE CLAMPS</b> EN 45545-2:2020</p>
<p><b>1. RSB®-Multiclamp</b> With only 3 clamp sizes cover tube diameters from 6-25.4 mm.</p>	<p><b>2. Mounting rails &amp; mounting rail nuts</b> Stainless steel mounting rails in different heights acc. to DIN 3015. Installation with mounting rail nuts. Optimized installation solution by FKB: VISITEC rail nut with loss protection.</p>	<p><b>3. Flame retardant tube clamps</b> The well-known line of RSB® tube clamps, available as a flame retardant version, is the ideal solution for the transport and railway market.</p>
<p><b>COMBINATION</b></p>	<p><b>PROTECTION WRAP</b> EN45545-2:2020</p>	<p><b>TUBE CLAMPS WITH ELASTOMER INSERTS</b> EN 45545-2:2020</p>
<p><b>4. RSB®-'2+5-System'</b> Two clamp sizes cover pipe diameters from 6-42 mm. Only one multiple weld plate with uniform bolt spacing for all tube clamps of the sizes 2+5.</p>	<p><b>5. Flame retardant protection wrap</b> The flame retardant hose sleeve is THE solution for the protection of cables, hose lines or hydraulic lines from abrasion or other damages both indoor and outdoor.</p>	<p><b>6. Tube clamps with inserts</b> Tube clamps with noise protection insert. Optimal combination of vibration isolation and structure-borne sound decoupling.</p>

## Technical data

Special materials for clamp bodies / preventive fire protection

MATERIAL EN 45545-2	POLYPROPYLENE (PP-F)	POLYAMIDE (PA66-F)	SOLID RUBBER (TPE-F) 80° Sh	SOLID RUBBER (TPE-F) 70° Sh
T01 EN ISO 4589-2: Oxygen concentration	OI = 40,5 %	OI = 38,7 %	OI = 31,1 %	OI = ≥ 32 %
T10.03 EN ISO 5659-2: Optical density of smoke gas 25 kW/m³	D <sub>s</sub> max. = 11,2	D <sub>s</sub> max. = 45	D <sub>s</sub> max. = 43,3	D <sub>s</sub> max. = 143
T12 NF X 70 100-1 & -2: Smoke gas toxicity 600 °C	CIT <sub>NLP</sub> = 0,16	CIT <sub>NLP</sub> = 0,62	CIT <sub>NLP</sub> = 0,24	CIT <sub>NLP</sub> = 0,13
Compliance with requirement sets R22, R23, R24, R26 for the hazard level	HL1 - HL2 - HL3		HL2	HL1 - HL2 - HL3

### CONFORM TO THE NORM

Flame retardant tube clamps in compliance with DIN 3015 and tested according to **EN 45545-2:2020** and to **UL94**. Our hose sleeve satisfies the requirement sets **R22/R23** for the hazard level **HL2/HL3** in accordance with **EN 45545-2:2020** and complies with the requirements of the **UL94 V-0** plastics flammability standard.

You require further information on our products? You have any questions about the application or are interested in a special solution? Our RSB® team will be happy to advise you! Please do not hesitate to contact us!



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