ROTHSCHENK

CERTIFICATE

EUROSAFE

Version: 02 Update of 12.03.2025	**Restraint system Red Lash system CV 1200, for 18 IBCs in ISO sea container according to CTU code, test according to EN 12195-1, Annex D.2**				**EUROSAFE certificate no.** 2018-02-003 V2
Certificate no. Basic version:	2018-02-003	**Place of Review:**	Aub	**Test date:**	01.02.2018 12.03.2025 (update)
Client:	G & H GmbH Rothschenk, Industriestrasse 8-10, 97239 Aub	**Persons present:**	G & H GmbH Rothschenk: Mr. Andre Bauer EUROSAFE GmbH: Mr. Wolfgang Neumann		

1. Area of application:
This certificate is valid for combination IBCs with a filling volume of 1,000 liters.
The load securing system from G & H GmbH Rothschenk is called 3-piece lashing, has two parts and is used on lashing eyes with a minimum ring thickness of 12 mm. The strength of the lashing points (in the container system) was verified by calculation using an FEM method. The restraint system has a breaking load of 8,000 daN and an applicable MSL of 4,000 daN (SF=2:1) per 2-part restraint system.

2. Inclination test according to DIN EN 12195-1 Annex D.2
The load units were tested with a tipping angle of 40 degrees. The maximum tipping angle achieved was 40 degrees over 5 minutes. A greater tipping angle was not possible due to the risk of the 20' container overturning.

3. Driving dynamics test in accordance with DIN EN 12642 Annex B and CTU code
The loading units (rigid IBCs) were already tested in 2014 and in March 2016 by means of dynamic driving tests on road vehicles and in combined transport (container on rail vehicle) dynamic loads of up to 2 g (exposure time 50-60 milliseconds in combined transport container on rail wagon) with equally positive results (expert opinion 2016-03-001 and further tests).

4. Test objects: 18 combination IBCs with a filling volume of 1,000 liters, total net weight 18,000 kg.

Fig. 1: 18 combination IBCs with air bag

Fig. 2: Tilting to 40 degrees

Applied standards/norms:	DIN EN 12195-1 Inclination test up to 40 degrees/longitudinal	Testing in rail traffic with 1.8 g using dynamic overrun tests, see expert opinion: 2016-03-001	DIN EN 12642 Annex B Driving dynamics test • 3 × full braking 0.8 g, • 3 × cornering 0.5 g, • 3 × backwards 0.5 g Values from expert opinion: 2016-03-001

5. Image documentation of the audit on 01.02.2018 (excerpt)

Fig. 3 Preparation with air bag

Fig. 4: Form-fit stowage in container offset by 90°

Fig. 5: Finalizing upper lashings with ¼ shells

Fig. 6: Finalizing lower lashings with ¼ shells

Test result:
After an exposure time of 5 minutes, the load moved between 4 and 7 cm in an inclined position (40 degrees), depending on the measuring point. The system was able to safely restrain the forces applied. After the container was lowered, the goods largely moved back, leaving an irreversible free space of 2 cm.
The distance compensated in the restraint system was a maximum of 5 cm in total in the area of the container doors.

The edge protectors must be sufficiently stable to absorb the punctual forces between the packaging and the restraint system. Furthermore, the pressure points of the restraint system must be positioned in such a way that they can also be safely absorbed by the packaging material. The system proved to be sufficiently stable in the static inclination test in accordance with DIN EN 12195-1 and was able to safely absorb the forces applied.

The load must be secured to the end wall and to the sides using positive locking. The remaining free space transverse to the direction of travel must be properly filled with air cushions. The straps have absorbed the pre-tension with the strap elongation in the reversible area, and there was no danger whatsoever during the tipping process and when the doors were subsequently opened.

Tester overall system:	EUROSAFE GmbH, Wolfgang Neumann, personally certified expert according to DIN EN ISO/IEC 17024:2012 for road, rail and sea transport (including dangerous goods) for load securing, packaging and load unit formation	**Certification number Checker:**	ZN-20120507-0253 valid until 08/2027
Signature / Stamp:	Verpackung und Ladungssicherung Euro Zert Certification Überwacht durch: SVG Euro-Zert GmbH Wolfgang Neumann DIN EN ISO/IEC 17024:2012 ZN-2012-05-07-0253 Gültig bis 08/2027 Personenzertifizierter Sachverständiger	**Exhibition venue** Am Germanenring 30 63486 Bruchköbel **Date of issue of certificate:** 01.02.2018 (first issue) 12.03.2025 (revision)	