

# Excerpted translation - complete original available on request.

Federal Railroad Authority

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Subject: Approval of FFU 74 plastic railroad sleeper  
Reference: Your application of 17/12/2022 – Mr. Bretschneider  
Enclosures: 1 Scope of application and applicable documents

Dear Ladies and Gentlemen,

In response to your application for approval of the FFU 74 plastic railroad ties from SEKISUI Eslon Neo Lumber, I have decided as follows:

### Decision:

- I. I approve the Sekisui FFU 74 plastic sleepers in ballasted track superstructure as track sleepers, switch sleepers and bridge sleepers and on open bridges in variants as bridge beams as doubled-up bridge beams on federal railroads.

This approval is valid until 31/03/2027.

This decision contains 7 pages and may be used only as a whole.

The FFU 74 plastic railroad ties from SEKISUI Eslon Neo Lumber are manufactured from polyurethane reinforced with glass fiber of 740 kg/m<sup>3</sup> density. Depending on dimensions, plastic railroad ties may be used on the top of breakstone ballast, under rails, switches and bridges, and on open bridges with ballast-free track surface, as bridge ties.

Table 1: Application area for FFU 74 plastic sleepers

		Cross-sectional dimensions [cm]			Axle driving mass [t]	Speed [km/h]	Application limits
Ballast	Track	10	26	240	22,5	≤ 100	-Einzelschwelle <sup>1)</sup>
		10	26	260	22,5	≤ 100	-Erdbauwerk <sup>2)</sup> -Trogbauwerk <sup>3)</sup> -Bahnhof <sup>4)</sup>
		12	26	240	22,5	≤ 100	-Trogbauwerk <sup>3)</sup> -Bahnhof <sup>4)</sup>

		12	26	240	22,5	≤ 120	-Einzelschwelle <sup>1)</sup>
		12	26	260	22,5	≤ 120	-Erdbauwerk <sup>2)</sup> -Trogbauwerk <sup>3)</sup> -Bahnhof <sup>4)</sup>
		14	26	240	22,5	≤ 120	-Trogbauwerk <sup>3)</sup> -Bahnhof <sup>4)</sup>
		14	26	240	22,5	≤ 160	-Einzelschwelle <sup>1)</sup>
		14	26	260	22,5	≤ 160	-Erdbauwerk <sup>2)</sup> -Trogbauwerk <sup>3)</sup> -Bahnhof <sup>4)</sup>
		16	26	240	22,5	≤ 160	-Trogbauwerk <sup>3)</sup> - Station <sup>4)</sup>
		16	26	240	22,5	≤ 230	- Single sleeper <sup>1)</sup>
		16	26	260	22,5	≤ 230	
		16	26	260	25	≤ 160	
	Switch	16	26	260	22,5	≤ 160	
	Switch	16	26	260	25	≤ 120	
Bridges with open deck		12	24	250	22,5	≤ 160	max. offset <sup>5)</sup> 10 cm
		14	24	250	22,5	≤ 160	max. offset <sup>5)</sup> 20 cm
		16	24	250	22,5	≤ 230	max. offset <sup>5)</sup> 25 cm
		16	26	250	22,5	≤ 160	max. offset <sup>5)</sup> 25 cm
		16	26	250	22,5	≤ 160	max. offset <sup>5)</sup> 30 cm
		16	26	250	22,5	≤ 120	max. offset <sup>5)</sup> 30 cm

- 1) At constrained points, e.g. existing signal or overhead line poles, a shortened sleeper may be used if the neighboring sleepers have the standard length of 2.6 m or comply with the standard superstructure according to Ril 820.2010.
- 2) An earthen structure should be topped with dedicated plinths to increase the transverse resistance:
  - a. For sleepers with a height of 10 cm: 3 plinths with the dimensions h x w x l = 6 cm x 26 cm x 15 cm
  - b. For sleepers with a height of 12 cm: 3 plinths with the dimensions h x w x l = 4 cm x 26 cm x 15 cm
  - c. For sleepers with a height of 14 cm: 3 plinths with the dimensions h x w x l = 2 cm x 26 cm x 15 cm.
- 3) On bridges in trough construction with reduced ballast bed thickness according to Ril 820.2010
- 4) In the station area with reduced ballast bed thickness according to Ril 820.2010 or if space is limited, e.g. due to the platform.
- 5) The offset is the distance between the rail web and the center of the bridge bearing.

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