

**List of materials allowable for use in pantograph contact shoes  
of traction units for contact with the overhead contact system  
of PKP Polskie Linie Kolejowe S.A.**

No.	Symbol of the material	Manufacturer	Limitations
1	SK-162	Elektrokarbon a.s. – Slovakia	no technical limitations
2	F20E10SCu	Carbo-Graf Sp. z o. o. – Poland	no technical limitations; valid until 6 April 2023
3	F20E1020SCu	Carbo-Graf Sp. z o. o. – Poland	no technical limitations; valid until 6 April 2023
4	SK01Cu	Schunk Carbon Technology GmbH - Austria	this type of material can be used on PLK line with a reservation that during a stop under a single wire line two pantographs must be raised and activated
5	SK07Cu	Schunk Carbon Technology GmbH - Austria	no technical limitations
6	SK85Cu	Schunk Carbon Technology GmbH - Austria	this type of material can be used on PLK line with a reservation that during a stop under the single wire line two pantographs must be raised and activated
7	SK85ACu	Schunk Carbon Technology GmbH - Austria	no technical limitations
8	P5696	MERSEN France Amiens S.A.S. – France	no technical limitations
9	P8511	MERSEN France Amiens S.A.S. – France	no technical limitations
10	MY131	Morganite Electrical Carbon Ltd. – Great Britain	no technical limitations
11	MY7A2	Morganite Electrical Carbon Ltd. – Great Britain	no technical limitations
12	S4202	Morganite Electrical Carbon Ltd. – Great Britain	this type of material can be used on PLK line with a reservation that during a stop under a single wire line two pantographs must be raised and activated
13	RH 83 M6	PanTrac GmbH – Germany	no technical limitations
14	RH83M8	PanTrac GmbH – Germany	no technical limitations
15	RH84M8	PanTrac GmbH – Germany	no technical limitations

**Note:**

In case of technological/maintenance passages for the needs of PKP Polskie Linie Kolejowe S.A., it is recommended to use the solutions for removing ice and rime from the contact wires of overhead line at the maximum speed of 70 km/h. Such solutions consist in the use of contact strips with an additional element whose leading edge is made of metal or other solutions (e. g. de-icing strip of the FAN-NL-B3 type, manufactured by Fanina-Pzemysl).