



# SIEMENS

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## Trackguard Retarder PUCK Segments

### Active environmental protection by reducing braking noise

Trackguard Retarder PUCK segments make an active contribution to both environmental protection and industrial safety by effectively reducing noise levels generated during braking.

This noise is caused by wheel vibration when the retarding beams of the retarder segment act on the wheels. The noise extends over a wide frequency range; the high frequencies with, in some cases, very high sound pressure levels, predominate. It is precisely this that makes braking noise particularly unpleasant. Thanks to novel retarder segments, such noise emission levels are reduced and both staff and local residents are less affected.

Due to series of tests performed over many years under real-life operating conditions and at test installations at stations, a novel material has been developed for use on retarder segments, audibly cutting down on high-frequency braking noise. This material combines both the reliable braking effect with excellent sliding properties and the environmental compatibility of the materials used.

In terms of their dimensions, the retarder segments are compatible with those already fitted by Siemens and can thus be easily replaced by existing PUCK segments.

#### Benefits

Considerable reduction in high-frequency braking noise

Usage of biocompatible raw materials

Reliable braking effect with excellent sliding properties

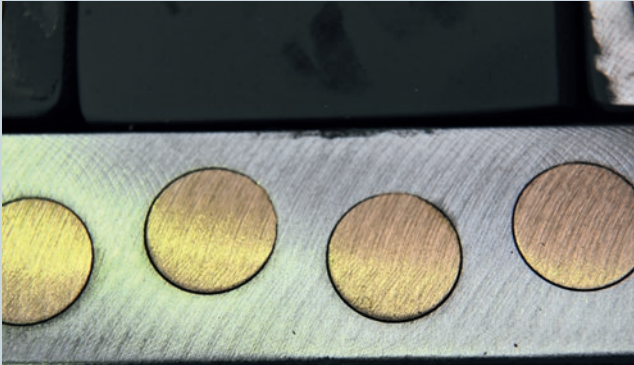
Increase in the average friction coefficient and thus increased braking capacity

Dimensions compatible with those of existing retarder segments



Retarder segment (retarding beam with PUCK inserts)

| Technical data                       |  |
|--------------------------------------|--|
| Dimensions (W x H x D)               | 560 mm x 103 mm x 61 mm  |
| Weight                               | 19 kg  |
| Material / design / quality class    | Retarder segment: GGG 70 (cast iron with spheroidal graphite)<br>PUCK inserts: sintered ceramic (hybrid friction material)<br>This friction material comprises metal powder sintered at high temperature and other ceramic components as well as corrosion inhibitors. |
| Standards / certificates / approvals | The friction materials involve products as defined by 1907/2006/EC (REACH regulation).   |
| Chemical characterization            | In line with Directive 67/548/EEC or 1999/45/EC  |



Retarder segment with PUCK inserts



Retarder segment (braking beam with PUCK inserts)

Trackguard® is a registered trademark of Siemens AG.

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The information in this document contains general descriptions of the technical options available. The required features should therefore be specified in each individual case at the time of closing the contract. For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action and integrate each component into a holistic, state-of-the-art security concept. Third-party products that may be in use should also be considered.