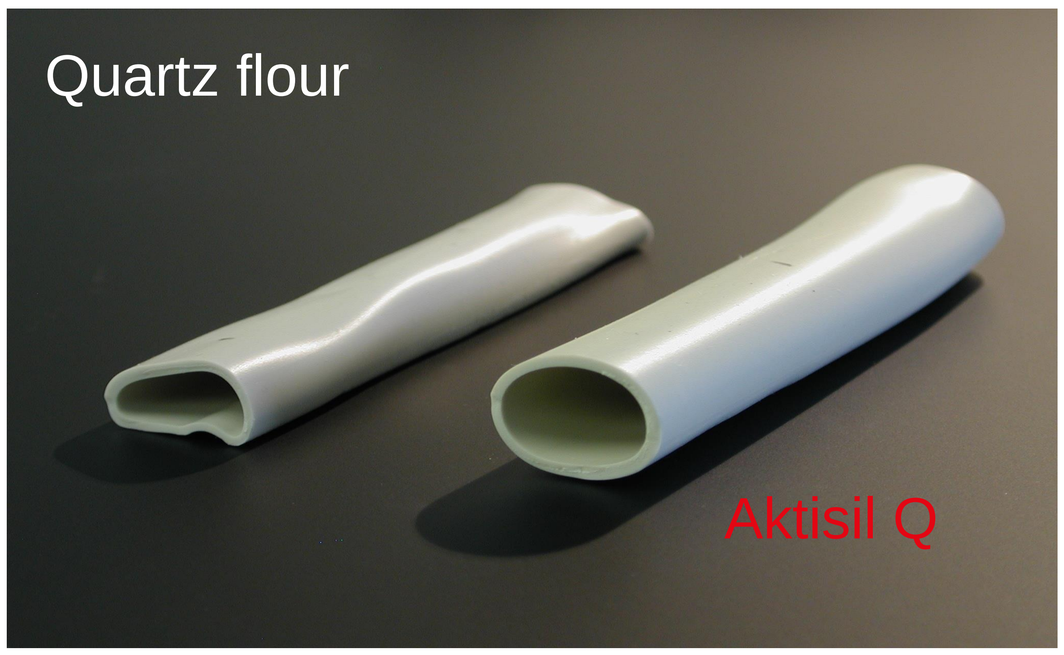
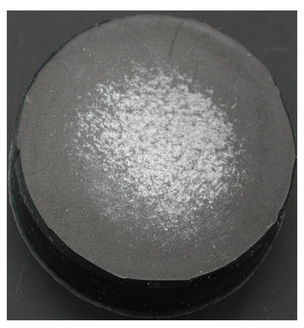
# Boosting silicone rubber with Aktisil Q in combination with quartz flour

## Facts

### Improved Collapse Resistance




### No Blooming of Curing Agent

| After 4 weeks, compound colored dark | | |
|---|---|---|
| Base cpd. | Quartz flour | Aktisil Q |
|  |  |  |
| post-cured, 4 h / 200 °C | | no post-cure |

## Issue

compounds designed for moldings → typical loading of untreated quartz flour: 25 phr → insufficient physical properties for some applications

## Objective

untreated quartz flour + Aktisil Q = improved physical properties

## Formulation

| *Hardness range 40 – 45 Shore A* | Curing Agent C6 | | Perkadox BC-40S-ps | |
|---|---|---|---|---|
| | QF | QF Aktisil Q | QF | QF Aktisil Q |
| Quartz flour (QF) | 25 | 25 | 25 | 25 |
| Aktisil Q | - | 12.5 | - | 12.5 |
| Curing Agent C6 * | 1.2 | 1.2 | - | - |
| Perkadox BC-40S-ps ** | - | - | 0.99 | 0.99 |
| Elastosil R 401/40 | 100 | 50 | 100 | 50 |
| Elastosil R 401/30 | - | 50 | - | 50 |
| | | | | |
| Cure conditions | 5 min. / 165 °C | | 5 min. / 180 °C | |
| Post-cure | 4 h / 200 °C | | | |
| Immersion in oil IRM 903 | 72 h / 150 °C | | | |
| * 2,5-Bis-(t-butylperoxy)-2,5-dimethylhexane<br>** Dicumyl peroxide | | | | |

### Approach

- addition of small amount of Aktisil Q
- combination of 30 and 40 Shore A base compound in order to retain the hardness level

### Quartz flour grades used

- QF (GER): typically used in German and European area
- QF (USA): typically used on American continent

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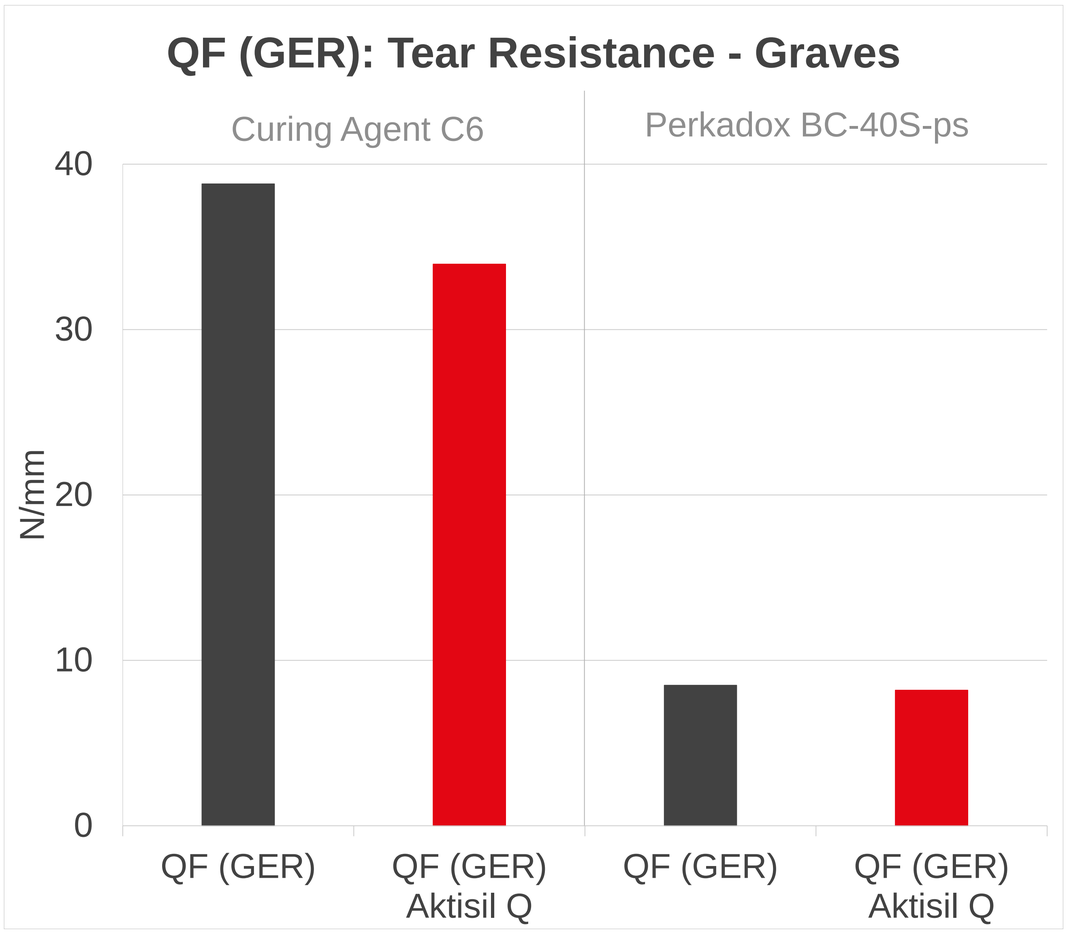


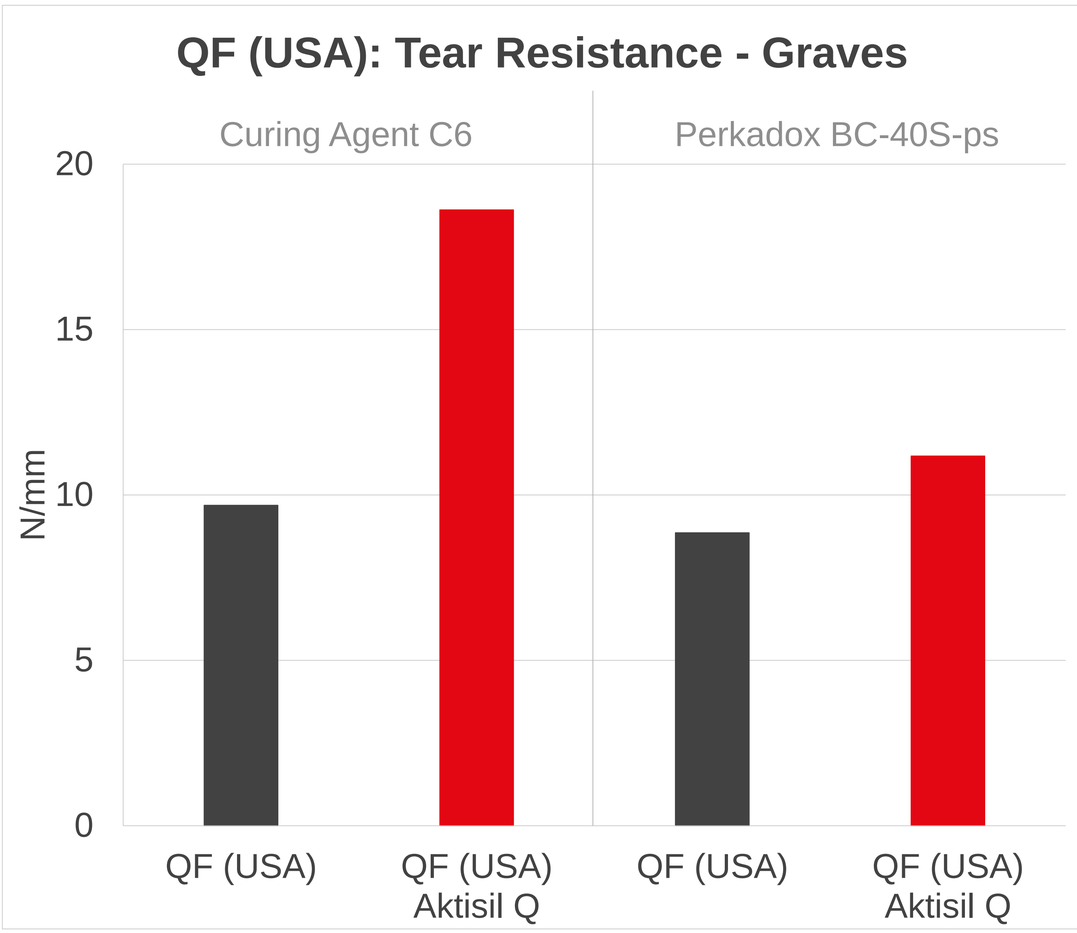


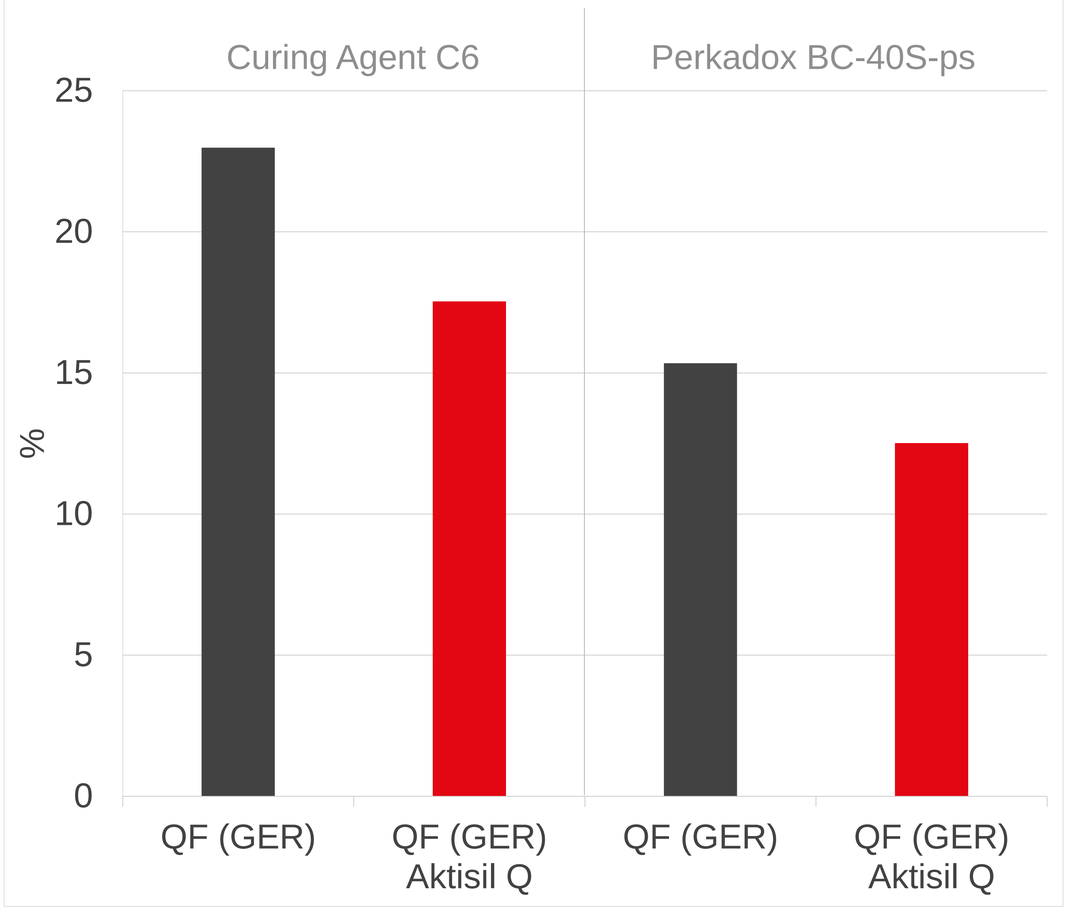


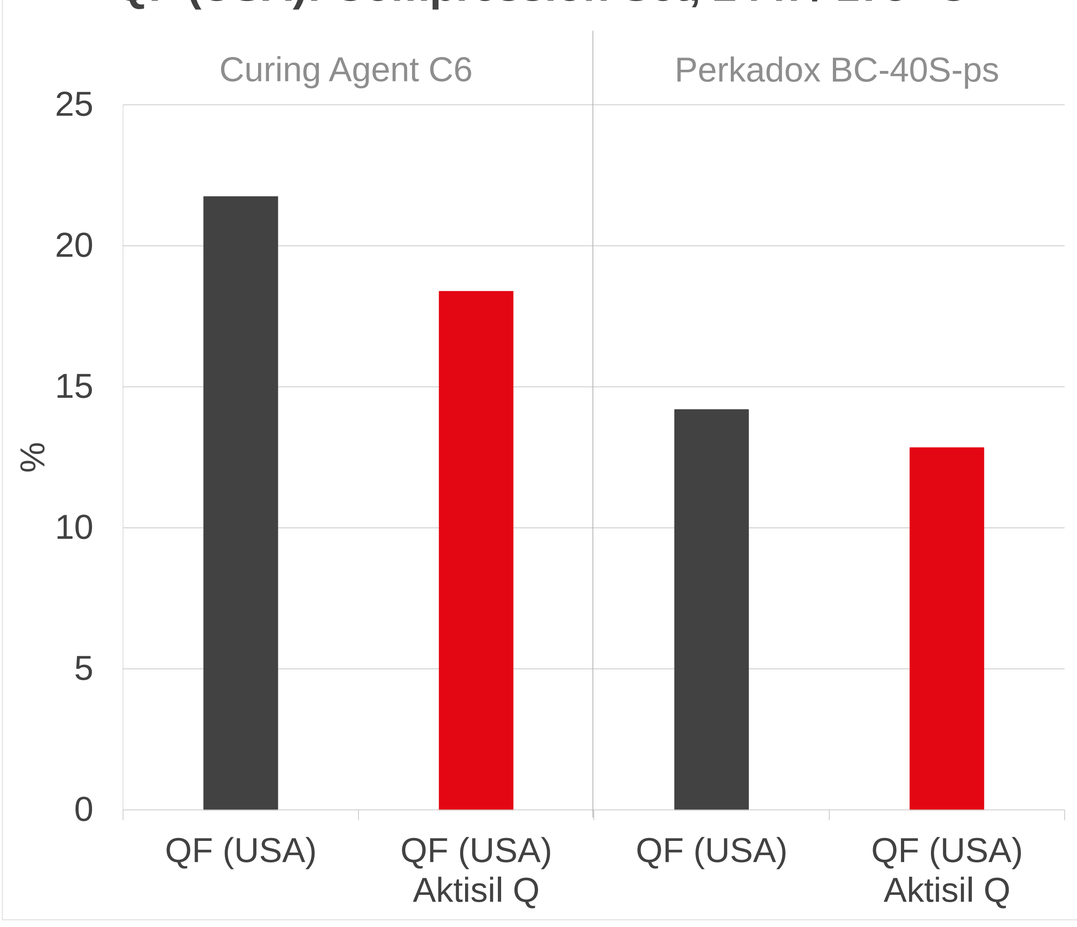


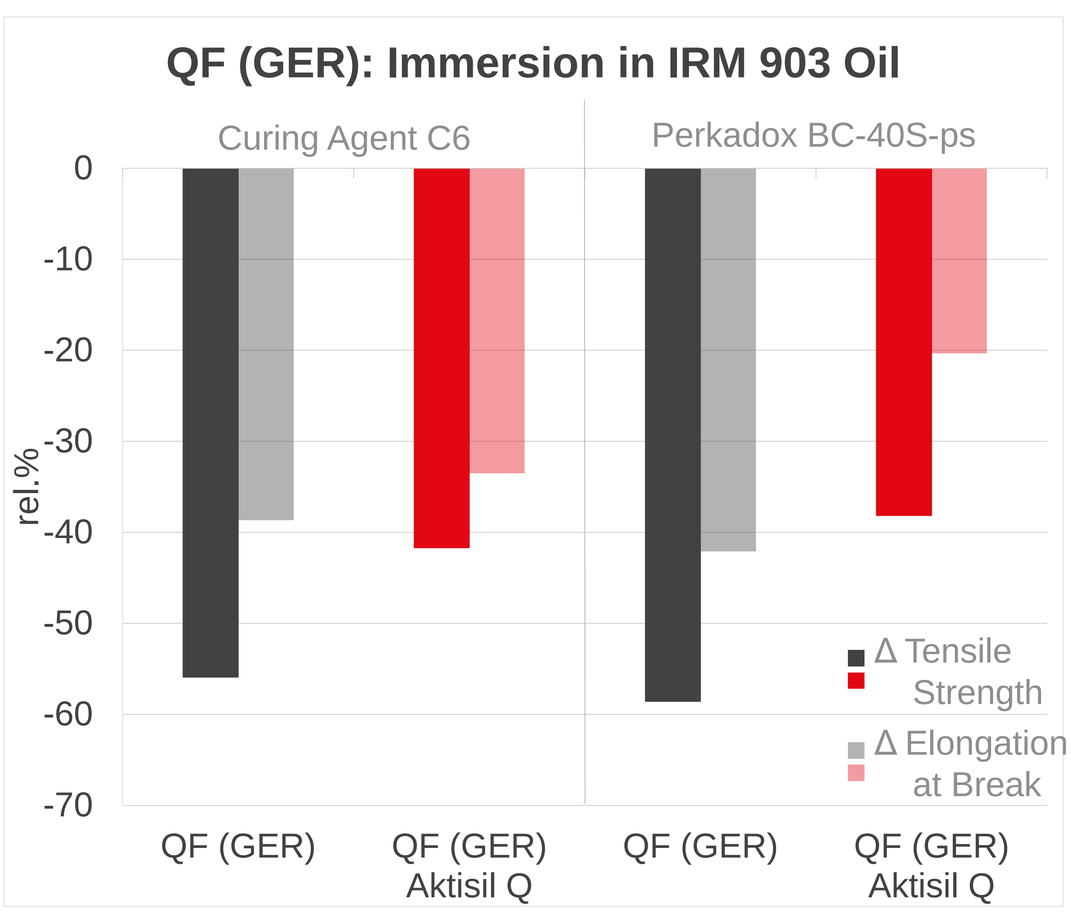


**QF (GER)**
**+ Aktisil Q**

- comparable tear resistance
- improved compression set
- improved oil resistance
- potential reduction of compound costs of -5%

**QF (USA)**
**+ Aktisil Q**

- improved tear resistance
- improved compression set
- potential reduction of compound costs of -5 %