

COESFELD

MATERIAL TEST

DeMattia32



DeMattia32

Dynamic test system for determination of flex and crack growth properties of rubber according to DIN ISO 132



- Silent machine run
- 32 stations
- 16 simultaneous readings



- Control via touch panel
- Free entry or pre-select of repeating cycles
- Remaining runtime displayed
- Pausing and restart possible at any time



DeMattia32 - Crack Initiation

Measurement and Evaluation

Test Procedure

The machine runs at 5 Hz

After certain run time, e.g. 1 h, 2 h, 4 h, 8 h, 24 h, 48 h, 72 h and 96 h, the specimen are observed

Observation is done at a clamping distance of 65 mm

The crack results are recorded

Crack Ranking

Rank 1: Small punctures in amount less than 10

Rank 2: - More than 10 punctures or
- Less than 10 small punctures, but at least one larger crack smaller than 0.5 mm

Rank 3: One or more cracks larger than 0.5 mm, but smaller than 1 mm

Rank 4: One or more cracks larger than 1 mm, but smaller than 1.5 mm

Rank 5: One or more cracks larger than 1.5 mm, but smaller than 3 mm

Rank 6: One or more cracks larger than 3 mm

Result

Median of the amount of cycles to reach rank 1 to 6

DeMattia32 - Crack Growth

Measurement and Evaluation

Test Procedure

Punctuation of specimen with a 2.5 to 3.0 mm cut

The machine runs at 5 Hz

After certain run time, e.g. 1, 2 and 5 kilo cycles, the specimen are observed

Observation is done at a clamping distance of 65 mm

The cycles are recorded according to crack growth

Crack Growth Ranking

Rank 1: Cycles to lengthen crack from L to L+2 mm

Rank 2: Cycles to lengthen crack from L+2 to L+4 mm

Rank 3: Cycles to lengthen crack from L+4 to +10 mm

Result

Median of the amount of cycles to reach rank 1 to 3

DeMattia32 - Specs

Technical Data	
Specimen	25 x 200 mm (W x L)/ 6-8 mm thickness
Load per station	70 N
Span distance	75.5 +/- 0.50 mm
Span observation	65 mm
Stroke	+57.25 +/- 0.25 mm (<i>Option: adjustable</i>)
Stroke frequency	10 to 300 (+/- 2) strokes per min (selectable)
Cycle Counter	1 to 2,000,000 cycles
Tempering Chamber	<i>optional</i>
Dimensions and Connection	
Dimensions (HxWxD)	approx. 1,750 x 1,360 x 560 mm
Weight	approx. 300 kg
Mains	3 ~ 400 V / 50 Hz N/PE / 32 A CCE-Plug
Power	3,100 VA

Optical Crack Measurement

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- Motorized X-Y Portal
- Camera System
- TCP connection to PC station

Optical Crack Measurement

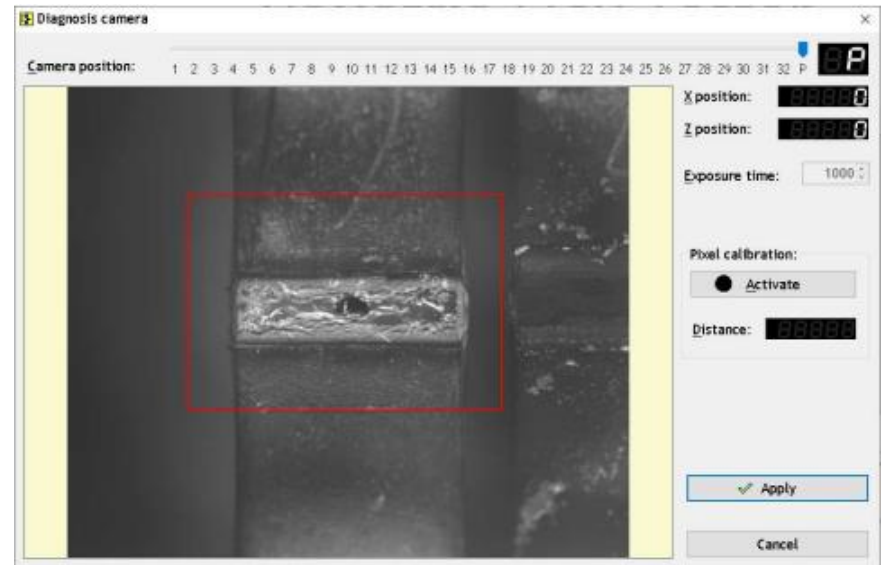
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- **Crack Initiation**

- Mark Crack
- Evaluation of Crack Count

- **Crack Growth**

- Mark Crack Length
- Evaluation of Crack Growth



Optical Crack Measurement

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Technical Data	
X-Axis	Belt Drive, <0.1 mm accuracy
Y-Axis	Spindle Gear Drive, <0.01 mm accuracy
Drives	Stepper Drive with absolute Encoder
Camera	5 MPx (higher resolution optional)
Lenses	Precision lenses, ~30 mm picture width