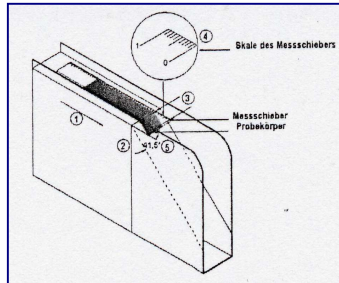


# ACPM 200P Automatic Bending Stiffness Testing Device with Parallel Measurement Value Logging

## Initial situation

- Bending stiffness of textile fabrics is determined according to DIN 53362 (manual cantilever process)
- made-up products require the detection of the influence of the seam and the bending stiffness as a function of seam distance



## Disadvantages of the manual process:

1. uneven feed rate
2. subjective determination of the overhang length (angular position)
3. visual reading of the overhang length
4. low reading accuracy (half millimetre scale)

## Target

Development of a measurement device and a process for:

- the determination of seam stiffnesses as well as its influence on the adjacent textile surface
- the determination of wide-related bending stiffness of flexible materials, such as textiles, papers and films

## The ACPM Features

- sample thickness from 0,1 mm to 10 mm
- sample width up to 210 mm
- realisation of two measuring ranges by the arrangement of two measuring planes with different inclination angles
- selectable variable feed rate
- constant feed during testing
- detection of a maximum of 21 parallel measurement data along the sample width
- high degree of automation
- easy and convenient operation
- data output is possible as a file
- reproducibility of the results > 95 %



The theoretical foundations for the development were laid within the scope of the dissertation of M. Sc. Manal Seif at the Institute of Textile Machinery and High Performance Material Technology (ITM) at the TU Dresden.

ACPM 200 P				Biegesteifigkeitsmessgerät (Cantilever)			
Probekörper		Probekörper		Probekörper		Probekörper	
Probekörper	Probekörper	Probekörper	Probekörper	Probekörper	Probekörper	Probekörper	Probekörper
3	005	207,0 mm	4,99 g	100	120,25	0,1920	0,1681
210 mm	005	210,0 mm	80,07 g/m²	90	135,47	0,1461	0,1587
400 mm/min		210,0 mm	1,02 mm	80	138,36	0,1263	0,2251
0 mm/min				70	151,88	0,3325	0,3032
				60	157,87	0,4227	0,2666
				50	163,43	0,4739	0,2690
				40	168,25	0,5178	0,4212
				30	174,05	0,5737	0,4663
				20	178,14	0,6278	0,5881
				10	175,31	0,5921	0,4812
				0	173,17	0,5646	0,4888
				-10	169,78	0,5193	0,4622
				-20	167,71	0,5124	0,4164
				-30	165,88	0,4928	0,4813
				-40	162,01	0,4615	0,3748
				-50	159,87	0,4409	0,2680
				-60	156,36	0,4145	0,3336
				-70	152,28	0,3858	0,2113
				-80	148,36	0,3525	0,2070
				-90	146,82	0,3271	0,2229
				100	133,07	0,2542	0,2361