

# Index

---

- anisotropy 101
- bending 111
- shear 101
- tensile properties 101
  
- bending 123
- curve 124
  - close-to-constant 124
  - close-to-linear region 124
  - initial higher stiffness 124
  - zero-motion position 124
- directionality 138
- hysteresis 127
- length 139
- model 142
- non-linear regression 147
- stiffness 124
- viscoelasticity 130
- bowshaped geometry 66
- buckling 162
- B-spline 294
  - curve 295
  - interpolation 295
  - mesh extension 296
  - surface 295
  
- cantilever methods 139
- circular fabrics 188
- circular pedestals 242
- circular-thread diameter 62
- complex deformation measurement 54
- compression 25
- compressive curve 26
- computer-aided clothing 2
  
- convergence criterion 261
- cubic-spline-interpolation 126
  
- discretisation scheme 243
- displacements 147
- double curvature 54
- drapemeter 57
- drape simulation 267
  - algorithm 283
  - body form 291
  - round rod 286
  - skirts 291
  - sphere 289
  
- elliptic geometry 66
  
- FAST system 27
  - bending meter 28
  - bending rigidity 32
  - comparison 33
  - compression meter 28
  - dimensional stability test 30
  - extensibility 29
  - extension meter 29
  - formability 33
  - shear rigidity 32
  - thickness 32
  
- FabricEye® 43
  - image analysis 34
  - pilling 43
  - relative flatness 53
  - relative smoothness 52
  - result report 49

- surface skewness 53
- thickness 32
- fabric cantilever 188
- fabric constitutive laws 12
- fabric drape 188
- fabric structure 1
- finite-element analysis 165
- finite-volume 243
  - control volumes 247
  - discretisation 243
  - formability 33
  - formulation 243
  - governing equations 250
  - non-linear equations 259
- five-layer structure 88
  - first outside layers 89
  - incompressible core 89
  - second outside layers 89
- geometry
  - areas 40
  - crimp height 37
  - diameters 39
  - geometrical parameters 36
  - image analysis 34
  - sett and thread-spacing 36
  - surface properties 34
  - tension method 37
  - VIDS image analysis system 34
  - weave angle 40
  - yarn 39
  - yarn configuration 61
  - yarn cross-section 40
- inter-fibre friction 135
- KES system 8
  - compression tester 88
  - pure bending tester 133
  - shear tester 163
  - surface tester 73
  - tensile tester 98
- large strains 2
- LEICA QWin image analyzer 199
- lenticular section 65
- line search technique 260
- low stress 24
- maximum sett 61
- moment-curvature curve 123
- Newton–Raphson method 268
- node number 202
  - location 202
- nonlinear stress–strain behaviour 6
- objective measurement 9
- Peirce’s geometry 65
- physiological requirements 2
- polar diagrams 108
- psychological requirements 2
- racetrack section 64
- seams 223
  - three-dimensional (3D) 231
  - circular seams 236
  - drape coefficient 231
  - drape profile 198, 233
  - radial seams 233
  - two-dimensional (2D) 223
    - elastic bending theory 224
    - flexometer 215
    - horizontal seams 213
    - seam allowance 216
    - second moment of area 215
    - vertical seams 223
- SEM 23
- shear 151
  - shear deformation 165
  - shear modulus 169
  - shear stiffness 154
  - shear strain distribution 167
  - shear stress distribution 168
  - shear stress–strain curve 177
  - shearing behaviour 151

- strain energy 247
- strain-hardening 112
- tensile 4
  - estimations 86
    - bias directions 30
    - principle directions 72
  - linearity 106
  - properties 101
  - stress-strain curve 4
- tensile elongation 102
- tensile loading curves 97
- tensile resilience 102
- tensile resilience model 108
- tensile work 102
- texture mapping 296
  - skirt 298
- three-dimensional drape 188
  - objective measurement 188
  - subjective measurement 190
- trigonometric function 199
- trimming surface 298
- two-dimensional drape 190
  - evaluation methods 190
  - testing methods 194
  - weight distributions 192
- warp 112
- warp yarns 112
  - plastic strains 116
  - plasticity theory 115
  - work-hardening 114
- weft 112
- work recovery model 107
- woven fabric properties
  - compression behaviour 82
  - cover factor 68
  - crimp 68
  - fabric roughness 75
  - folded yarns 69
  - friction properties 77
  - geometrical roughness 74, 77
  - geometrical thickness 88
  - geometry theories 61
  - lateral compression 84
  - limiting volume 82
  - load-compression 82
  - low-load compression behaviour 82
  - measured roughness 76
  - mechanical behaviour 2
  - mechanical thickness 88
  - plain-weave fabrics 61
  - pressure-thickness curve 83
  - pressure-thickness relationship 82
  - structural parameters 66
  - structural properties 72
  - surface features 72
  - surface testing curves 76
  - thickness 67
  - twist redistribution 69
  - weave density 181
  - zero pressure 82
- wrinkle properties 135
- wrinkle recovery angle 135
- Young's modulus 196