

(For test methods and standards, see Table 5.1 in Chapter 5 and Table 7.1 in Chapter 7. Only those not presented in these two tables are included in this Index.)

- AAMTCC, 113, 343
- ABC pillars, 16, 216, 219, 338, 348
- abrasion resistance, (*see also* testing), 9–10, 44, 51, 126, 160, 283, 305, 307, 328, 329
- ACORD, 272
- Acordis, 122, 244, 284, 324, 329
- acoustic insulation, *see* sound proofing and noise insulation
- acrylic fibre, 10, 12, 13, 244, 293, 313
 - resin, 138, 242, 296
- adhesion, factors influencing, 124, 139, 147, 186, 293, 294
 - mechanisms of, 139
- adhesives, (*see also* lamination), 17, 140–1, 143, 152
 - hot melt, (powder, web, film), 17, 140–2, 145–51
 - moisture curing, 150–3
 - solvent based, 140
 - water based, 140
- ADtraz, 306
- aesthetic design, 35
- agile manufacturing, 136
- Aerotek, 330
- airbags, 7–8, 16, 215, 231–4, 317
 - coating of, 232
 - causing fatalities, 233
 - legislation, 231, 233
 - market size, 231
 - ‘smart’, 233
 - testing of fabric, 229
 - variants and related products, 215, 231, 311
- Airbus Industries, 288
- air conditioning in cars, 210, 333
- aircraft, 311–19
 - carpets, 316
 - composites, 288, 316–17
 - escape chutes, 317
 - fireblockers, 315
 - flammability, 312–16
 - furnishing fabrics, 311–16
 - interior design, 311
 - life rafts and jackets, 317–18
 - volumes and growth, 311
 - seat belts, 317
 - weight savings, 281, 288, 312, 316
- airjet spinning, 47
- air textured yarns, 25
- air texturizing, 51
- air porosity of fabrics, 209
- airships, 319
- algae ‘blooms’, 266
- alkali dyeing, 121
- Alcantara, 204, 209, 274
- Alveo foam, 215
- Amaretta, 204
- Amicor, 329
- AMPE, 17, 348
- antimony FR agents *see* flame retardancy, *also* bromine compounds
- anti-static finishes, 165, 182–3, 308, 309, 316
 - yarns *see* Negastat (DuPont) and Resistat (BASF)
- anti-soil *see* cleanability
- Antron P140 (DuPont), 308
- applied design, 32
- Aramid (*see also* Kevlar), 245, 284, 285–6, 305
- ASHRAE Comfort Standard, 207
- ASTM E-99B water vapour permeability test, 188, 209
- Atlas light fastness tester, 169–71
- Audi, 235
- automobile
 - conferences, 338
 - history, 4–5
 - interiors, 1, 3, 9, 24–5, 94–5
 - manufacturers, 20
 - publications, 343

- 'shredder residue' (ASR), 269
 - statistics, 1–3
- Autotech Conference, 338
- BASF, 134, 285
- battery separators, 241–2, 332
 - market size, 242
- Benz, Karl, 4
- back-coating *see* coating
- Bactekiller (Kanebo), 329
- balloons (hot air), 319
- bagging of fabrics, 46
- BATNEEC, 259–60, 265
- Basofil (BASF), 285
- 'bead' seat cover, 207
- Beaufort Air Sea Equipment Ltd, 318
- belts (drive), advantages, 247–8
 - test methods, 229
- Benninger warping machine, 59, 60
- black-panel, 172
- 'blind dyeing', 116, 122, 327
- BMW, 231, 235, 240, 331
- Bonas Machine Company, 64
- bonnetliner (hoodliner), 16, 242–3
- BS 5750, 265
- BS 7421, 188
- BREATH AIR (Toyobo), 201
- bromine compounds (FR agents), 183, 268, 290, 291
- Brundtland Report, 255
- BTTG, 182, 186, 337, 343
- bond strength *see* adhesion
- bootliners (trunkliners), 16, 220, 242–3
- brand recognition, 3
- 'breathability' of car seats *see* water vapour permeability
- BRITE EURAM, 209, 348
- bursting strength *see* test methods
- buses and coaches, 305–6
 - use of composites, 287
 - seats, 305
 - seat belts, 231
 - vandal proof seat fabric, 305, 307
- butyl rubber, 247
- cabin air filters, 238–41
 - Filtrete (3M), 241
 - method of action, 239–40
 - micronAir (Freudenberg), 240
 - need for, 238–9
- CAD *see* design
- calenders *see* lamination
- campaign models, 34
- carbon arc lamp, 170
- carbon dioxide, 256–7, 273, 329 *see also*
 - greenhouse effect *and* global warming
- carbon fibre, 207, 284, 285, 287, 311
- car clinics, 34
- CARE, 272, 331
- carding of fibres, 47
- carpets (automotive), 16, 229, 234–8
 - coating, 235
 - composition, 237
 - noise control, 236–8
 - secondary (mats), 236
- CEN 2900, 158
- chenille yarns, 53
- Chevrolet Indy Pace car, 198
- Chromatex, 22
- chromaticity co-ordinates, 115, 167
- Chrysler (Daimler-Chrysler), 19, 158, 270
- Ciba, 134, 156, 292
- CIE D65, 185
- CIE 1976 lab co-ordinates, 167
- CIELAB 1976 equation, 167
- Clariant, 120
- cleanability, 8, 13, 14, 125, 160, 165, 192, 274, 281, 305, 306, 308, 315, 316, 329
- colour measurement, 114–16, 167–8
- colour spinning, 25
- colour CMYK, 133, 134
- computer aided design, 28, 29, 42
- compounding (mixing), 18, 138, 247, 294
- core and effect yarns, 51
- CMC (2 : 1) equation, 167–8
- coaches *see* buses and coaches
- coating, 111, 137–9, 157, 292–303, 317, 322–3
 - calender, 301
 - direct, 125, 295–9
 - fabrics used, 293
 - foam, 124–6
 - polymers used, 294, 296–7
 - rotary screen, 301–2
 - transfer, 299–301
- Coating and Lamination (annual International Conference), 339
- Collins and Aikman, 20, 237, 311, 312
- Colour Index, 113
- colour measurement, 114–16, 167–8
- colour solid, 114–15
- comfort, 8, 188, 205, 207, 210, 226, 281, 303, 306, 308 (*see also* seat comfort)
- Complan (PVC), 303
- composites, 282–9, 322–3
 - advantages, 286–8
 - biodegradable, 274, 331
 - introduction, 282
 - fabrication, 288–9
 - growth, 282
 - materials used, 285–6
 - organizations, 345
 - see also* weight reduction
- conferences, automotive, 338
 - materials and machinery, 339
 - other relevant, 339
 - textiles, 337–8
- COSHH Regulations, 267–8
- Cosmopolitan Textile Company, 213

- cost reduction and control, 6–7, 19–21, 206, 216, 221, 326, 332
- cotton, 245, 248, 293
- count systems of yarns, 47, 54
- courses of knitted fabrics, 77
- Courtaulds Automotive Products, 25
- Courtaulds Research, 94, 122
- coverstock (face material), 16
- cramping of woven structures, 67
- crease resist process, 45
- Crea Tech Process, 274, 331
- creative design issue, 35
- crimp interchange, 75
- crimp of yarns, 75
- CRS (child restraint systems), 230, 233
- Crocking *see* test methods
- cultural preferences, 33, 186
- customization, 327, 333
- cut resistant fibre (CRF-Hoechst), 307
- Daimler-Benz V Class Minivan, 206
- Daimler Gottlieb, 4
- dashboard, materials, 16
- Decitex, 54
- delta *E*, 167
- Delphi, 199
- denier, 54
- design (interior), 24–43, 331–2
 - development process, 32
 - dumbing down of, 36, 40
 - computer assisted (CAD), 26, 29–31, 42
 - education, 31
 - led companies, 28
 - of fabrics, 28
 - understanding requirements, 36
- development opportunities, 328–9
 - of velvet fabrics, 74
- DI-LOUR, 104
- dobby looms, 64
- dobby weaving, 62
- Dolan fibre, 244
- door casing (panel), 16, 215–17
 - materials, 16
 - moulding, 216, 218
 - textile insert moulding, 215
- Dornbirn IMMFC Conference, 337
- Dornier, 64
- double needle bar Raschel, 80
- double plush pile fabrics, 69
- Douglas Aircraft Company, 311
- drafting of woven designs, 62
- drag factors, 24
- draw ratio, 46
- draw warping, 46
- drawing of fibres, 45
- draw texturizing, 46
- Du Pont, 124, 125, 134, 200, 285, 286, 308, 313
- Dubied, 94
- dust particles, 238–9
- dye compatibility, 114, 120
 - trichromatic mixture, 114
 - types, 25, 112–13
- dyeing, 112–22, 156
 - acrylic fibre, 122
 - alkali, 121
 - ‘blind’, 116, 122, 327
 - machinery, 117
 - nylon, 121–2
 - yarn package, 116–19
 - polyester, 120–1
 - recipe prediction, 115
 - yarn, 116–19
- Dymetrol, 205
- Dyneema (DSM-UHM fibre), 310–11
- Ecofil Fibre Clusters (DuPont), 200, 202, 206
- eco-labelling, Blue Angel, 269
 - Oeko-Tex, 269
 - Toxproof, 269
 - White Swan, 269
- EDANA, 97–100, 106, 109, 344, 339
- electric vehicle, 199, 242, 332
- ELV ‘end of life vehicle’, 7, 21, 254, 269–70, 272–3, 278, 330
- EMAS, 265, 275, 280
- EMS-Chemie AG, 142
- En Cad, 132
- engineering led company, 28
- Enichem, 204, 205
- Epson, 132
- ENDS Report, 342
- environmental agencies, 260, 266, 342
- environment, effect of car emissions on, 257, 263, 329–30, 334
 - effect of car disposal *see* ELV
 - future, 329, 279
 - journals, 342
 - legislation, 254, 257–63, 262
 - pollution, air, 140, 144–5, 261–2
 - pollution, landfill, 254–6, 262, 264, 330–1
 - pollution, water effluent, 121, 122, 264, 265–7
 - protection acts, 259, 267
- environmental ageing testing, 185
- ergonomics of car seats, 211, 224
- examination (of fabric), 189–90, 327
- exhaust gases from cars, 263, 280
- Expofil, 339
- EU Directives and legislation, 238, 254, 257–8, 261–2, 268, 270, 305, 330
- fabric coating *see* coating
- fabric designer, 28
- fabric technology choices, 37
- Fade-Ometer, 170
- Fadex F UV absorber (Clariant), 120
- FAKKRA, 162, 173

- false twist texturizing, 49
 feedstock yarns, 51
 federal motor vehicle standards, 183, 215, 233
 felts, 104
 FIBC, 304
 fibreglass, 212–13, 214, 242, 243, 323
 fibres, 22–3, 44–5, 348
 used in transportation, 11–12, 283–4
 filament, continuous yarn, 25
 intermingling, 49
 knit-de-knit crimping, 49
 finishing of fabric, 111, 123–6, 156
 warp knit, 84
 weft knit, 92
 woven, 69
 woven pile, 73, 138
 fireblockers, 292, 315
 flame lamination *see* lamination
 flame retardancy (FR), 183–4, 289–92, 305, 307, 308–9, 311, 312–16, 322–3
 disadvantages of FR finishes, 291
 intumescent coatings, 290
 fibres, 292
 limiting oxygen index (LOI) of fabrics, 283–5, 315
 mechanisms, 290–1
 testing of, 183, 315
 testing, (heat release), 313–14
 testing, (smoke opacity), 313
 toxicity of combustion gases, 313, 314
 see also bromine compounds
 flatbed weft knits, 38, 94
 flat bed lamination *see* lamination
 float woven structures, 61
 float yarns, 53
 flock, 53, 205, 221, 236, 343
 fluopolymers, 14, 297
 FMEA, 19
 fogging, 19, 160
 Ford, 19, 158, 160, 261, 270, 331
 Henry, 5
 Ikon car, 326
 Model T car, 5
 Freudenberg, 239–40
 frosting, 177
 foam in place moulding, 196–7
 foam processing, 124–6
 full rip fabrics, 35, 85

 gauge of machines, warp knit, 76
 weft knit, 77, 83
 gear crimping of yarns, 49
 Gemstone range (Milliken), 206
 General Motors, 4, 19, 94, 158, 198, 199, 273
 Georgia Textile Machinery Company, 106
 GEO Prism Car, 199
 glass filtering effect, 10
 glass reinforced plastics, 285

 globalisation, 6–7
 global car, 5
 global warming, 255–7, 329
 Goretex (WL Gore and Associates), 188, 209, 210
 greenhouse effect, 9, 255–7
 greenhouse gases, 256–7
 grey scales, 185
 Gossamer Albatross, 287
 guide bars, weft knit, 78

 Haake Fog Testing apparatus, 181
 harmonization of testing, 161, 173
 harness of jacquard looms, 63
 Hart Fog Testing apparatus, 181
 headliners, 16, 212–15
 HCTM process, 214
 Tramivex Process, 214
 structure, 213
 heat history of synthetic fibres, 45–6
 heat setting (stabilization) of fabric, 110, 123–4, 293
 Heraeus Light Fastness tester, 171
 Hewlett-Packard, 132
 HCTM Process, 214
 HGV vehicles, 245, 302–3, 305
 manufacturers, 20
 Hohenstein Institute, 188, 269, 344
 hot melt *see* adhesives, *also* lamination
 hood (car roof), 243–4
 hook and loop fasteners, 197–8
 Hope Webbing, 198
 horse hair (rubberized), 201–2, 209
 hoses, 247–9, 252
 testing, 229
 hybrid car, 330, 332
 hydroentanglement *see* nonwovens
 Hypalon (DuPont), 297

 Ikon car *see* Ford
 Index Conference, 339
 Index, 284, 315
 ink jet printing, 38, 39
 internet purchasing, 332
 Interplas, 339
 Innotech, 132
 innovation, 326–7, 329
 Inter-Auto Conference, 338
 interior fibre friction, 47
 intermingling of filaments, 49
 International Maritime Association, 309, 322
 intumescent FR coatings, 290
 IPPC, 261
 Ishihara, 114
 ISO 14001, 255, 265, 329
 ISO 2631, 207
 ISO 9000, 19
 ISO 9092; 1988, 96

- Isoplan-Trevira, 303
ITMA Exhibition, 339
- Jacquard, Joseph Marie, 64
 looms, 58, 62
 patterning, 37, 332
 weft knit, 87
- Jeftex, 30
- JIT, 6–7, 19, 161
- journals, 339–43
 automotive, 343
 composites, 342
 dyeing and finishing, 341
 environment, 342
 plastics, rubber and chemicals, 341
 textile, 340–1
- Karl-Meyer, 77–9, 80–2, 199
- Kaptex, 203
- kapok, 4
- Kawabata, 186, 192
- Kevlar (Du Pont), 246, 248, 286–7, 310, 313
- Kiefel, Paul, 218
- Knit de-knit crimping, 49
- Kunit, 103, 199–200, 202, 209, 271
- Kunststoff Exhibition, 339
- Kuraray, 204
- Kyoto Environmental Conference, 257, 275, 329
- lamination (*see also* adhesion and adhesives), 139–54, 157
 discussion of methods, 153–4
 calender, 145–9
 hot melt
 environmental issues, 267
 flame, 111, 143–5, 155, 157, 267
 ‘open’
 slot die extruder, 151–2
 landfill, 254–6, 262, 264, 330–1
- Lantor, Breatherfelt, 288
 Firet Coremat, 288
- ‘lean production’, 6–7
- leather, natural, 203–4, 209
 man-made and suede, 204–5
- Lear Corporation, 7, 199, 221
- Le Shuttle, 308
- life cycle analysis (‘cradle to grave’), 269, 287
- life jackets, 296–7, 317–18
- life rafts, 296–7, 318
- Lindau-Dornier, 66–7
- light fastness, 10, 162, 168–73, 305 (*see also* UV degradation)
- loop raised warp knit fabric, 84
- Lorica, 204, 209
- lubricants, 122, 179, 266
- Lycra, 75
- Lyon, France home of Jacquard, 64
- Machtex lamination machine, 153
- Mace snag tester, 179
- Macintosh, Charles, 137
- market information, 347
- marine uses of textiles, 296–7, 308–11
 coated products, 310
 growth, 309
 importance of FR, 308–9
- Martindale abrasion test, 51, 173–7, 307
- Mathis Oven, 299
- Mayer and Cle MCPE jacquard, 87–9
- MCPE weft knit jacquard machine, 87
- Meadows and co-workers (environment), 255
- meltblown *see* nonwovens
- Mercedes, 235, 240, 273
- metamerism, 115–16, 159
- Meyer Calender, 148
- Michel Van De Wiele, 71–3
- microfibres, 204, 205
- Middle East Oil Crisis, 9, 24
- ‘minking’, 185
- mirror image of double plush jacquards, 70
- mobile homes, 306
- Modacrylic, 283, 313, 314
- modular construction of automobiles, 6–7, 212, 221, 236, 332–3
- moisture regain of fibres, 11–12
- Montreal Protocol, 257
- moulding of plastics, 17, 216, 218, 219, 235–6, 288
- MPV (multipurpose vehicle), 6, 206, 328
- multiknit, 199, 202
- Munsell Book of Colour, 114
- natural fibres, renewed interest, 4, 202, 214, 217, 220, 274
 use in composites, 274
- NHTSA (US highway safety), 233–4
- needlepunching, 102, 104
- Negastat (DuPont), 182
- Neoprene rubber (DuPont), 18, 232, 247, 297, 304
- New Generation Vehicle, 332
- Nissan, 331
- nitrile rubber, 247, 296
- noise, control, 105
 insulation, 220, 235, 236–8
 road noise, 238, 246, 248
- Nomex (Du Pont), 285, 286, 308
- non-woven fabrics, 95–106, 108–9
 alternative to polyurethane foam, 105, 200–2, 213, 214, 218, 234, 271, 275
 definition, 95–6
 hydroentanglement, 103
 moulding, 105–6, 215
 speed of production, 96
 production methods, 96–103

- use in the car, 97, 105–6
 - web formation, 96
- Nordson, 152
- North Sea Conferences (environment), 258, 259, 265–6, 283, 293
- nylon, (6, 66), 8, 10, 11, 258, 259, 265–6, 283, 293
- Nylon, 46, 232
- Obem dyeing machine, 118
- odours in cars, 188, 328–9
- office furniture, 95
- Oligomer, 120–1
- Oko (or Oeko) Tex *see* eco-labelling
- open end spinning, 47
- outsourcing, 6
- ozone layer, 258, 263
- Panox (Lantor UCF), 284, 314, 315
- parcel shelf (of cars), 16, 218–19
- PBI (polybenzimidazole) fibre, 284, 315
- PBT (polybutylterephthalate), 53
- particulate matter, 238–9, 263–4
- pick-up truck, 160, 328
- pillling, 177
- platforms (for vehicles), 5–6, 333
- plastics in cars, 15–18, 22–3, 226, 330, 323
 - (*see also* recycling)
 - advantages, 15–16
 - organizations, 345–6
 - types, 16–17
 - weight reductions *see* weight reduction
- plush weft knit sinkers, 87
- Pirelli, 205
- peel bond (*see also* test methods and adhesion)
- particulate matter (PM), 239, 256, 262, 263–4
- point paper, 60
- pollutants *see* environment
- 'polluter pays' principle, 266
- polyamide *see* nylon
- polybutylterephthalate (PBT), 53
- Polyethylene Ultra High Modulus;
 - Dyneema (DSM), 284, 310–11
 - Spectra (AlliedSignal), 284
- polyester, 10–13, 16, 25, 44, 113, 120–1, 124, 141, 194, 208, 228, 231, 234, 241, 242, 245, 247, 271, 275, 283, 293, 311, 313
- polypropylene, 12, 13, 16, 105, 141, 215, 218, 237, 241, 243, 274–5, 283, 304, 331
- polypropylene, dyeability, 13
- polypropylene foam, 16, 234
- polyurethane, coatings, 138, 204, 226, 296
 - films, 209
 - moisture cure adhesives, 150–3
- polyurethane foam, 16, 14–15, 226, 234
 - (*see also* flame lamination)
 - alternatives to, 199–202
 - breathability, 209
 - compressibility, 200–1
 - sound insulation, 237, 243
- Porelle (Porvair), 209, 210
- porosity of materials, 209
- powder adhesives *see* adhesives and lamination
- POY, 45
- PRAVDA, 272
- prepregs, 289
- presser foot technology (knitting), 39, 126
- printing, 39, 111–12, 126–37, 156–7, 323
 - Batik, 127
 - block or hand, 126
 - colour separation, 128
 - flatbed screen, 128
 - heat transfer, 130
 - Ikat, 127
 - ink jet, 131
 - resist, 126
 - roller, 127
 - rotary screen, 129
 - silk screen, 128
- Proban (Albright and Wilson), 292, 285
- process colour of ink jet, 131
- production rates of woven fabrics, 68
- PVC, 8–9, 16, 18, 141, 207, 212, 215, 243, 268, 293–4, 295, 296, 298, 299, 310, 303–4, 314, 317, 323
- Pyrovatex (Ciba), 292, 285
- QS 9000, 7, 19, 158, 192
- Quality Assurance, 158–9, 192–3
- Queen Elizabeth II, 309
- RAPRA, 337, 339, 345
- rapier weaving, 64
- railway textiles, 306–8
 - carpets, 308
 - composites, 308
 - CRF (cut resistant fibre), 307
 - seat covers, 307
 - volumes, 306
- Ramie fibre, 210
- Rascal Van, 199
- Raschel knitting, 13, 80
- rationalization of auto industry, 7, 221, 324, 333
- rayon, 245–6, 247
- recycling, 7, 17, 254, 269–74, 279
 - 'closed loop', 271
 - interior trim, 195, 230, 269–71, 279
 - logistics of car, 272–4
 - polyester bottles, 220
 - polyurethane foam, 271–2
- Recytex, 272–3
- Reeve Brothers, 300, 317
- Reliant Calender, 147
- Resistat (BASF), 309
- Rieter-Scragg, 49–50, 52

- 'ring dyed', 113
- ring spinning, 47
- Roaches International, 118
- Road safety, 7–8, 207, 233, 324–5 (*see also* seat belts *and* airbags)
- ropes, 310–11, 322, 322
- Robinson, Frank, 94
- Rover, 235
- rovings, 47
- rubberised 'horse hair', 201–2, 209
- 'run flat' tyres, 246
- rubber, 18, 227–8, 244–8, 252–3, 294–5, 296–7, 323
 - organizations, 345–6
- Saab, 210, 235
- safety, 3, 8, 211–12, 217, 227, 267–8, 281, 309, 324–5, 332
- sales (of vehicles), 2–3, 302
- sails, 310–11
- Sarna-Xiro film, 141, 212
- SBR rubber, 18, 296
- Schildnecht Flexing Tester, 298, 300
- Schopper abrasion test, 173–7
- scrim fabric in laminate, 14, 111
- Scotchguard Finish (3M), 125
- ScotWeave CAD System, 30
- scouring of fabric, 122–3
- seat belts, 16, 206, 228–31, 317
 - test methods, 229
- seat covers, 16,
 - construction, 14, 44–106
 - design, 22–44
 - early fabrics, 8–15
 - fabric, 8–15
 - materials, 8–10
 - performance standards, 162–5
 - test methods, 166–88
- seat comfort, 166–88, 207–11
 - body support, 207
 - breathability of materials, 209
 - measuring seat thermal comfort, 208, 224
 - overall picture, 210–11
 - porosity of materials, 209
 - thermal comfort, 188, 207–10
- seat structure, methods of construction, 195–9
 - alternative methods and materials, 199–205
- section warping, 59
- Seiren, 136, 137
- sewing threads, 203, 226
- shafts on dobby looms, 58, 62
- Shima Seiki, 94, 95
- ships *see* marine
- shogging in warp knits, 78
- silicones, 124, 176–7, 179, 186, 232, 297
- single jersey, 39
- Sisiara Seat System (Pirelli), 205
- Slot die extruder *see* adhesives and lamination
- snagging, 178–9
- Society of Dyers and Colourists, 113, 167, 172, 336, 344
- soil resistance, 328 (*see also* cleanability)
- Sophis Systems in CAD, 134
- sound proofing, 212, 214, 220–1, 234, 236, 238, 243
- spacer fabric, 85, 200, 202
- Spectra fibre (AlliedSignal), 310–11, 317
- spectral absorption, 168–70
- spectrophotometer, 116, 167
- spinneret, 45
- spot colour, 38, 39
- spun dyed, 13, 25
- staple fibre, 45
- staple spinning, 47
- SPC (statistical process control), 19, 159, 188–9
- 'stealth bus', 287
- stentering, 123 (*see also* finishing *and* heat setting)
- stitchbonded fabric, 105
- Stoll, 94
- Stork Brabant, 133
- stuffer box crimping, 49
- Struto, 98, 105–6, 199–200, 202
- suede, 204
- sunvisor, 16, 220
- 'superfibres', 329
- super pixel, 38, 39
- suppliers, requirements from, 19–21
- sustainable development, 255, 269–75, 330, 335
- SUV (sports utility vehicle), 6, 231
- Sympatex (Akzo), 188, 209, 210
- Taber method of abrasion testing, 173–7
- tarpaulins, 294
- titanium dioxide delustrant, 172–3
- Techtextile Symposium, 338
- Teflon (DuPont), 125
- Tencel (Acordis), 327
- test methods (for automotive seat fabric), 159–88, 192–3
 - abrasion, 44, 173–7
 - antistatic, 182–3
 - breathability (*see also* comfort), 188
 - cleanability, 185
 - colour, 168
 - crocking, 168
 - dimensional stability, 145, 184–5
 - effect on fabric design, 41
 - flammability, 183–4
 - fogging, 179–82
 - frosting, 177
 - handle and drape, 186

- harmonisation of, 161, 173
- laboratory conditions, 166
- odour, 188
- peel bond strength, 179
- pilling, 44, 177
- snagging, 188–9
- summary, 162–5
- tear strength, 186–7
- tensile strength, 44, 186–7
- UV degradation, 168–73
- Test and Standards Organizations, 346–7
- Textile Associations, 343–5
- texturizing, air, 25, 51
 - false twist, 49
- Textile Institute, 337, 344
- textile terms and definitions, 348
- thermoplasticity, 17, 45, 154, 215, 216
- thermoset plastics, 17
- Thinsulate acoustic insulation (3M), 220, 221
- Thermalite acoustic insulation (DuPont), 220
- Tier suppliers (1, 2, '0.5') to car manufacturers, 6–7, 19, 20, 21, 32, 221, 333
- Three-D (3D), fully fashioned, knitting of seat covers, 94, 196, 198–9, 327, 333
- 'three-litre' car, 275
- 3M Company, 125, 209, 221, 241
- Tramivex Process, 214
- travel, increasing, 281, 335
- Trevira, 309
- Tricot warp knit, 77
- Tristimulus colorimeter, 116, 167
- Toray, 204
- Toyota, 5, 23
- Turl Dish test, 188
- tufting of carpets, 101, 235
- Tunnel Tie, 198
- Twaron (Acordis), 305
- twill weave, 61
- tyres, 244–7
 - cords, 229
 - cross-ply, 244
 - history of, 244
 - disposal of, 246, 262
 - radial, 244
 - 'run flat', 246
 - structure of, 241
- UHM polyethylene, 310–11, 384
- ultrasonic welding, 154
- Ultra Tensile Steel (Goodyear), 246
- Underwriters Laboratory, 310
- universal strength tester, 180
- universities (with textile departments), 345
- Urethanes Conferences, 339
- UV degradation, 9–10, 44, 168–73, 219, 228, 243–4, 293, 296, 304, 310–11, 333
- velvet wovens, 70
 - 'V' weave, 70, 73
 - 'W' weave, 70
- design and development, 72, 74
- finishing, 73
- Jacquard constructions, 71
- pile incorporation, 70
- reflect warp principle, 70
- tuft adhesion, 70, 71
- vibration, 195, 211–12, 222, 235, 238, 332
- Virgin Airlines, 312
- Viscoteks^R Seiren printing system, 137
- Visil fibre, 315
- Viton (Du Pont), 297
- VOCs, 261–2, 267 (*see also* environment air pollution)
- Volkswagen (VW), 240, 273
- Volvo, 231, 272–3
- warp knit,
 - courses and wales, 77
 - fabric characteristics, 85
 - finishing, 84
 - full rip, 85
 - guide bars, 77, 78
 - loop raised, 85
 - machine gauges, 77, 83
 - needle action, 82
 - Raschel, 80
 - shogging, 78
 - tricot, 77
 - yarns used, 84
- Water Acts, 258–9
- water vapour permeability (breathability) of seat covers, 188, 209, 210 (*see also* seat comfort, thermal comfort)
- Weather-Ometer, 170, 171
- weight reduction, 281, 286–8
 - aircraft, 281, 288, 312, 316
 - automobiles, 17, 22, 274–5, 330
 - buses, 287
 - ships, 310
 - trains, 287, 308
 - see also* composites
- weft knit, 86–95, 108
 - circular, 39
 - cropping, 91, 92
 - cropping waste, 91
 - cylinder, 87, 89
 - design and development process, 83, 84, 91
 - fabric characteristics, 94
 - finishing, 94
 - flatbed, 38, 94
 - floats, 91, 93
 - gauge, 89, 90
 - ground yarns, 91
 - needles, 91
 - pile crush, 92

- pile loops, 87
- pile yarns, 91
- production rates, 93
- slitting, 86, 92
- spirality, 86
- structures, 86
- welding, 154, 216
 - high frequency (HF), 154
 - radio frequency (RF), 154
 - ultrasonic, 154
- Welding Institute (The), 346
- Wellman, 271
- wheel arch liners, 243
- Wolffe Walsrode (Bayer) film, 210
- wool, 12, 13, 34, 175, 208–10, 283, 307, 313, 314, 345
- Wool Blue Scales, 172
- woven fabrics, 37, 54–76, 107
 - characteristics, 74
 - constructions, 68
 - design and development, 69
 - finishing, 69
 - finishing process, 69
 - Jacquard cast out system, 63
 - Jacquard design repeats, 63
 - pile structures, 69
 - stretch, 26, 75
 - stretch by pile interchange, 75, 76
 - thermoplastic, 45
 - twill weave, 61
 - warp and weft, 57–62
 - weights, 68
- Xenon Arc Lamp, 170–1
- Xiro (*see* Sarna-Xiro),
- Yarns, 44–54, 106–7
 - air textured, 25
 - chenile, 53
 - core and effect, 51
 - feedstock, 51
 - filament, 25
 - flock, 53
 - jet spun, 47
 - parallel textured, 51
 - ring spun, 47
 - spinning systems, 47
 - spun dyed, 13, 25
 - stretch PBT, 53
 - thickness, 54,
 - types, 46
 - wrap spun, 47
- Yarn Index, 348
- zero emissions car, 242, 330
- zero defects, 159, 189, 327
- Zimmer, 133
- Zirpro wool, 13, 292, 305, 309, 314, 315