Subject Index

ASTM Standard D 3/40-78: 30-31(table),
33
Canadian General Standards Board (CGSB),
30-31(table), 33, 37
European Union of Agrement (EUAtc),
30-31(table), 38
nuclear magnetic resonance (NMR) tests, 63-
74
polymer-modified, 7, 92-99, 100-109, 110-
126
specific gravity of, ASTM Standard D 70-
82: 64
static load tests
Canadian General Standards Board (CGSB),
38, 41, 46–47(tables)
European Union of Agrement (EUAtc), 38,
41, 46–47(tables)
Bituminous membranes (see Bituminous roofing
systems)
Bituminous roofing systems
coefficient of expansion values, 92-99, 96-
98(tables)
cold-laid system, 110-126
critical loading, 100–101
durability tests, 9
joint-bridge tests, 101–109
self-adhesive, 110–126
tension tests, 101–109, 122, 124(table)
two-ply system, 110-126
ultraviolet test, 9
Built-up roofs, 92–99
•
C
Calcination, stabilizer measurement, 66
Canadian General Standards Board (CGSB)
impact tests, 26–31(tables), 33–37
static tests, 38, 41, 42–47
Cap sheet, self-adhesive, 110–126
CGSB (see Canadian General Standards
Board)
Coatings, stabilizer content, 68–70, 69(table),
73(table)
Coefficient of expansion, bituminous roofing
systems, 92–99, 96–98(tables)

roof fasteners, 12-15

Fire risk, glue, cold-applied, 117–118

G Cohesion, rubberized asphalts, 75-91 Glass, in bituminous membranes, 92-99, 95(table) Cold-applied glue (see Glue, cold-applied) Cold-laid bituminous roofing system, 110–126 Glue, cold-applied adhesion of, 111-113, 112(table), 116 blisters in, 124 applicator equipment, 114-115 properties of, 124(table) tensile strength, 124(table) peeling resistance, 112-113, 113(table) testing of, 119 testing of, 111-116 use in bituminous roof system, 110-126 Compressive strength, insulating materials, ASTM Standard C 165-83: 24(table) Н Condensation, on metal fasteners, 21 Hail damage tests, single-ply roof membranes, D Heat aging test, roof durability, 9 Decking, and metal fasteners, 10-21 Heat transfer analysis, metal roof fasteners, 10-DOE (see U.S. Department of Energy) Ductility, asphalts, 84, 86(table), 87(table), 89 Humidity, effect on metal fasteners, 21 ASTM standards D 113-85: 84, 89 D 312-84: 89 Insulation D 449-79: 89 compressive strength of ASTM Standard C 165-83: 24(table) Durability of roofing, 9 and heat transfer, 16-20 under single-ply membranes 16-20, 23-52 E Elastomeric membranes impact tests, 25-38, 26(table) Johannesson test, heat transfer, 10, 15-20 ASTM Standard D 3746-78: 33 Joint-bridge test, 101-109 Canadian General Standards Board, 3, 37 European Union of Agrement, 38 L static load tests, 38, 41, 42-43(table) Lap-shear test, adhesive bonds, 54-62 Canadian General Standards Board, 38, 41 Loading, roof systems, 23, 100-101 European Union of Agrement, 38, 41 Low-slope roofs, use of metal fasteners, 10-20 Federal Test 2031: 41 European Union of Agrement (EUAtc), 5-7, 9 Membranes, single-ply General Directive for Assessment of Roof adhesive bonds, 53-62 Waterproofing Systems, 6 fracture, 33 impact tests, 38 impact tests, 25-38, 41, 50-51 static load tests, 38, 41 puncture resistance, 25-38, 41, 50-51 static load tests, 38, 41, 50-51 Membranes, two-ply, cold-laid bituminous roof-Fasteners, metal roof, 10-21 ing, 110-126 condensation on, 21 Metal decking, 11-16, 11(illustration) heat transfer, 11-21 Metal fasteners (see Fasteners, metal roof) Felt, saturated, nuclear magnetic resonance measurement, 67–68, 70–71, 71(table) N Filled coatings, stabilizer content, 68-70, Neoprene, in contact adhesives, 55, 56(table) 69(table), 73(table) Nuclear magnetic resonance Finite-difference theory, heat transfer, metal asphalt roofing production, 63 - 74

72(illustration)

ASTM Standard D 3701-83: 64

P	Self-adhesive cap sheet, 110-126
Paint and related materials, ASTM Standard D	Single-ply membranes (see Membranes, single-ply)
3980-83: 76	Single-ply roofing systems, 23–52
Peeling resistance, cold-applied glue, 111–113	Specific gravity
Perfotest Baronnie, 38, 51	asphalt, 64–66
Pigments, specific gravity of, ASTM Standard	ASTM Standard D 71-84: 64
D 153-84: 54	bituminous materials, ASTM Standard D 70-
Plastic cap, metal fasteners, 18-20	82: 64
Polyester, in modified bitumen membranes, 53-	filled coatings, 64, 68
62, 92–99, 95(table), 102–109	pigments, ASTM Standard D 153-84: 64
Polypropylene, atactic, in modified bituminous	pitch, ASTM Standard D 71-84: 64
membranes, 93-95, 102-109	Stabilizer, measurement methods, 64–70,
Polystyrene foam, glue damage, 113-114	69(table), 71(table), 73(table)
	calcination, 66, 69
R	extraction, 66, 68
Regression analysis, coefficient of expansion	nuclear magnetic resonance, 63, 66-67, 69-
values, 93, 96	70
Reinforcement, roof (see also Propylene, atactic;	specific gravity, 64-66
Styrene-butadiene-styrene)	Standards
membranes, 56(table), 102–109	consensus, 3–9
Research, roofing	development of, 3-9
European, 3–9	performance, 3, 6–9
organizations, 5	prescriptive, 7
and standards development, 3–9	Styrene-butadiene-styrene rubber, in bituminous
United States, 4, 7–9	membranes, 93, 95(table), 102–109, 110–
Roofing materials (see also Asphalt; Asphalt	126
roofing; Bituminous materials; Elasto-	Substrates, compressive strength of, 24(table)
meric membranes; Felt, saturated; Glass;	T
Polyester; Rubber; Thermoplastic mem-	
branes)	Temperature
guide to, 3 Roofing systems (see also Bituminous roofing	asphalt, rubberized, and ductility, 86(table),
systems)	87(table), 89 bituminous membranes, coefficient of expan-
critical loading of, 100–101	sion, 93, 96–99
ASTM Standard D 2523-78: 101	cold-laid bitumen roofing, and blister for-
standards for, 6–7	mation, 124
Rubber	and peeling resistance, 113
in asphalt, 75–91	single-ply rubber membranes, and adhesive
in bituminous membrane, 92–99, 110	binding, 58–59
in roof cap sheet, 110-126	Tests (see also ASTM Standards)
in single-ply membranes, 53-62, 56(table)	accelerated weathering, 9
styrene-butadiene-styrene, 92–99, 102–109,	adhesion, 84, 85(table), 88-89
110–126	Chang-Busching heat transfer, 16
tensile testing of, ASTM Standard D 412-	ductility, 84, 86, 89
83: 84, 101	durability, 9
	hail, 25
S	heat transfer, 10-21
Seams, adhesive-bonded	impact, 24, 25-38
environmental effects on, 53-54	Johannessen heat transfer, 15-16
single-ply rubber membranes, 53–62	joint-bridge, 101–109

lap-shear, 53, 55-62 nuclear magnetic resonance spectrometry, 63-Perfotest Baronnie, 38 pull-off adhesion, 84 puncture resistance, 25-38, 41, 50-51 specific gravity, 64-66 and standards development, 6, 9 static, 24, 38, 41 tension, 101-109, 122, 124(table) toughness-tenacity, 76-83, 78(table), 83(table), 84 - 89T-peel, 53, 55-62 ultraviolet aging, 9 Xenotest, 9 Thermal bridge, metal fasteners, 10-21 Thermoplastic membranes impact testing, 25-38, 28(table) ASTM Standard 3746-78: 33 Canadian General Standards Board (CGSB) test, 33, 37 European Union of Agrement (EUAtc), 38 static load testing, 38, 41, 44–45(table)
Canadian General Standards Board (CGSB)
test, 38, 41
European Union of Agrement (EUAtc), 38,
41
Federal Test 2031: 41

U

UEAtc (see European Union of Agrement)
Ultraviolet test method, roof durability, 9
U.S. Department of Energy (DOE), roofing research, 4

W

Waterproofing systems, 6, 53 Water vapor, and blister formation, 124 Weathering, 9 Wood decking, use of metal fasteners, 11–15, 11(illustration), 16–21

X

Xenotest, roof durability, 9