# Journal of Testing and Evaluation Subject Index Volume 24, 1996

A

#### Air permeability

Prediction of single-layer fabric air permeability by statistical modeling (Epps, HH), Jan., 26

### Aneurysm clips

Titanium cerebral aneurysm clips: characterization and performance in magnetic resonance imaging and computed tomography (Ho, JC, Wu, CY, Carron, MJ, Maughan, KP, and Schmidt, FJ), March, 85

### Aqueous phase modifier

Development of analytical methods for quantification of residual powder on 'powderless' latex gloves (Chen, ET, Hughes-Dillon, K, and Schroeder, LW), July, 229

### Arc bend specimens

Fracture mechanics expressions for the standard chord-supported arc bend specimen (Tarafder, S, Tarafder, M, and Ranganath, VR), March, 73

#### Audit

Evolution of the internal quality audit at Ford Motor Company's Central Laboratory (Terjimanian, A and Kelly, CJ), Jan., 37

#### Azadirachtin

Extraction and determination of Azadirachtin from soil and insects by supercritical fluid extraction (Brooks, MW, Roy, S, Uden, PC, and Vittum, P), May, 149

В

#### Bias testing

Bias testing: myths, misconceptions, and mistakes (Gould, G), Sept., 333

### Biaxial fatigue

Optimal design of a disk-shaped specimen for biaxial-tensile fatigue testing (Zouani, A, Bui-Quoc, T, and Bernard, M), Sept., 287

### **Book reviews**

Building Design and Construction Handbook (Fifth Edition) by Merritt and Ricketts (O'Connor, TF), July, 272

Copyright @ 1996 by ASTM International

The Contractor's Dictionary of Equipment, Tools, and Techniques by Webster (O'Connor, TF), May, 203

Engineering Materials 3: Materials Failure Analysis (Case Studies and Design Implications) by Jones (Scott, CG and Riga, AT), Jan., 57

Integrating Reliability into Microelectronics Manufacturing by Christou (Gupta, DC), Jan., 56

International Advances in Nondestructive Testing by McGonnagle (Scott, CG and Riga, AT), Jan., 57

Introduction to Engineering Materials: Behavior, Properties, and Selection, Engineered Materials Series 2 by Murray (Riga, AT and Scott, CG), March, 140 The Macmillan Dictionary of Measurement by Darton and Clark (Petersen, DR), Nov. 427

The Physics Quick Reference Guide by Cohen (Petersen, DR), July, 273

Scanning Tunnel Microscopy and Spectroscopy: Theory, Techniques, and Applications by Bonnell (Phelps, AW), Sept., 347

Simplified Building Design for Wind and Earthquake Forces, Third Edition by Ambrose and Vergun (O'Connor, TF), March, 142

Successful Management of the Analytical Laboratory by Milner (Riga, AT and Scott, CG), March, 141

Superconducting Levitation: Applications to Bearings and Magnetic Transportation by Moon and Chang (Vahradian, HM), May, 204

Thermal Analysis of Materials (Materials Engineering Series 5) by Speyer (Riga, AT and Scott, CG), Sept., 348

### **Breaking strength**

Color change as a predictor of strength loss in PFD cover fabrics (Epps, HH and Leonas, KK), Nov., 392

### **Bridge construction**

Cyclic tests on high-strength prestressed concrete frames (Mo, YL and Hwang, WL), May, 168

### **Building stone**

Review of durability testing of building stone with annotated bibliography (Carr, DD, Strickland, J, McDonald, WH, and Bortz, S), Sept., 324  $\mathbf{C}$ 

#### Certification

National Institute for Certification in Engineering Technologies Certification: addressing the technician component of laboratory quality (Pao, C, Clark, MA, and Antrim, JD), Jan., 45

### Chemical exposure

Corrosiveness of chromate exposure to steel embedded in soil or concrete (Poston, RW, Galitz, CL, and Yates, JS), Nov., 397

### Chlorides

Corrosiveness of chromate exposure to steel embedded in soil or concrete (Poston, RW, Galitz, CL, and Yates, JS), Nov., 397

### Chromatography

Eliminating wasteful "cut and try" procedures in gas chromatography method development using computer modeling (Annino, R and Villalobos, R), May, 143 Extraction and determination of Azadirachtin from soil and insects by supercritical fluid extraction (Brooks, MW, Roy, S, Uden, PC, and Vittum, P), May, 149

### Clad metal

Commercial applications of zirconium explosion clad (Banker, JG), March, 91

#### Closures

Leakers as a function of closure type in gallon-size plastic bottles in simulated small parcel test environment (Singh, SP and Syal, VP), July, 241

#### Coal

Bias testing: myths, misconceptions, and mistakes (Gould, G), Sept., 333

#### Coefficient of friction

Comparison of walkway-safety tribometers (Marpet, M), July, 245

Required coefficient of friction versus walking speed: potential influences of footwear and walkway surfaces (Fendley, AE and Marpet, MI), Nov., 359

### **Composites**

Effect of fiber coating on the temperature dependence of the elastic and anelastic properties of a fiber-reinforced borosilicate glass matrix composite (Wolfenden, A, Thomas, HM, Thomas, V, and Chawla, KK), July, 237

Robust design of the Iosipescu shear test specimen for composites (Chiang, YJ), Jan., 1

#### Computed tomography (CT)

Titanium cerebral aneurysm clips: characterization and performance in magnetic resonance imaging and computed tomography (Ho, JC, Wu, CY, Carron, MJ, Maughan, KP, and Schmidt, FJ), March, 85

### Computer-aided solutions

Eliminating wasteful "cut and try" procedures in gas chromatography method development using computer modeling (Annino, R and Villalobos, R), May, 143

#### Concrete

Cyclic tests on high-strength prestressed concrete frames (Mo, YL and Hwang, WL), May, 168

Fly ash as a pre-filter material for the retention of lead ions (Pandian, NS, Rajasekhar, C, and Sridharan, A), May, 181

#### Condom tests

Two parameters limiting the sensitivity of laboratory tests of condoms as viral barriers (Lytle, CD, Routson, LB, Thomas, DP, Regnault, WF, and Cyr, WH), Sept., 279

### Construction materials

Development and application of a quality system standard for construction materials testing laboratories (Spellerberg, PA, Trimm, WL, and Pielert, JH), Jan., 49

### Corrosion (metals)

Corrosiveness of chromate exposure to steel embedded in soil or concrete (Poston, RW, Galitz, CL, and Yates, JS), Nov. 397

Expanded windows for titanium use in the pulp/paper peroxide bleach plant (Schutz, RW and Xiao, M), March, 119

#### Creep

Creep lifetime under constant load and constant stress: theory and experiment (Aktaa, J and Schinke, B), July, 212 Creep testing of steels at very high temperatures (Lindblom, J, Seitisleam, F, and Henderson, PJ), Sept., 329

### Cyclic loading

Fatigue under stress cycling with nonzero means (Gong, Y and Norton, MP), July, 263

D

### Damage mechanics

Creep rupture investigation of 63Sn-37Pb solder by experiments and damage

mechanics (Ju, S-H, Sandor, B, and Plesha, ME), Nov., 411

#### **Depth measurement**

Improved indentation-depth method of hardness measurement (Ezhov, YV), Sept., 320

#### **Dimension stone**

Review of durability testing of building stone with annotated bibliography (Carr, DD, Strickland, J, McDonald, WH, and Bortz, S), Sept., 324

#### Drop height

Measurement and analysis of the overnight small package shipping environment for Federal Express and United Parcel Service (Singh, SP and Cheema A), July, 205

#### **Durability**

Review of durability testing of building stone with annotated bibliography (Carr, DD, Strickland, J, McDonald, WH, and Bortz, S), Sept., 324

E

#### **Efflorescence**

Evaluation of test methods and environmental conditions to promote efflorescence formation under laboratory conditions (Vickers, T and Moukwa, M), March, 80

### Elevated temperatures

Determination of the geometric profile and stress/strain state in the necked region during inelastic deformation at elevated temperatures using a non-contact measurement technique (Gaudig, W, Bothe, K, Bhaduri, AK, and Maile, K), May, 161

# Explosively formed penetrator (EFP) liner

Empirical determination of the manufacturing processes which affect EFP liner performance (Faccini, EC and Woodbury, HA), March, 123

F

### Fabric handle

Objective assessment of fabric handle in fabrics treated with flame retardants (Kim, JO and Slaten, BL), July, 223

### **Fatigue**

Creep rupture investigation of 63Sn-37Pb solder by experiments and damage mechanics (Ju, S-H, Sandor, B, and Plesha, ME), Nov., 411

Effects of fatigue on fragility testing and the damage boundary curve (Burgess, G), Nov., 419

Fatigue under stress cycling with nonzero means (Gong, Y and Norton, MP), July, 263

Optimal design of a disk-shaped specimen for biaxial-tensile fatigue testing (Zouani, A, Bui-Quoc, T, and Bernard, M), Sept., 287

### Fiber coatings

Effect of fiber coating on the temperature dependence of the elastic and anelastic properties of a fiber-reinforced borosilicate glass matrix composite (Wolfenden, A, Thomas, HM, Thomas, V, and Chawla, KK), July, 237

### Finite element method

Robust design of the Iosipescu shear test specimen for composites (Chiang, YJ), Jan., 1

#### Fly ash

Fly ash as a pre-filter material for the retention of lead ions (Pandian, NS, Rajasekhar, C, and Sridharan, A), May, 181

#### Force plate

Comparison of walkway-safety tribometers (Marpet, M), July, 245

#### Formic acid

Performance of zirconium and zirconium alloys in organics (Yau, T-L), March, 110

#### Fracture mechanics

Fracture mechanics expressions for the standard chord-supported arc bend specimen (Tarafder, S, Tarafder, M, and Ranganath, VR), March, 73

Fracture test method for Mode I fracture of thin metal materials (Cotterell, B, Sim, MC, Amrutharaj, G, and Teoh, SH), Sept., 316

### Fracture mechanics expressions

Fracture mechanics expressions for the standard chord-supported arc bend specimen (Tarafder, S, Tarafder, M, and Ranganath, VR), March, 73

### Fracture testing

Comparison of *R*-curve methodologies for ranking the toughness of aluminum alloys (Reynolds, AP), Nov., 406

#### Friction

High-resolution force plate analysis of utilized slip resistance in human walking (Buczek, FL, Jr. and Banks, SA), Nov., 353

Slip resistance characteristics of footwear solings assessed using the SATRA friction tester (Wilson, M), Nov., 377

G-H

#### Jas

Eliminating wasteful "cut and try" procedures in gas chromatography method

development using computer modeling (Annino, R and Villalobos, R), May, 143

Objective assessment of fabric handle in fabrics treated with flame retardants (Kim, JO and Slaten, BL), July, 223

#### Hardness testing

Minimum thickness requirements for Rockwell hardness testing (Heberling, TG, Fee, AR, and Tobolski, EL), March, 131

### High-strength concrete

Cyclic tests on high-strength prestressed concrete frames (Mo, YL and Hwang, WL), May, 168

### Hydrogen peroxide

Expanded windows for titanium use in the pulp/paper peroxide bleach plant (Schutz, RW and Xiao, M), March, 119

### I-J

#### **Indentation hardness**

Improved indentation-depth method of hardness measurement (Ezhov, YV), Sept., 320

#### Initial deformation

Initial deformation during small punch testing (Cheon, JS and Kim, IS), July, 255

#### Iosipescu test specimens

Robust design of the Iosipescu shear test specimen for composites (Chiang, YJ), Jan., 1

Testing and evaluation of metal-plateconnected wood truss joints (Vatovec, M, Gupta, R, and Miller, T), March, 63

### Laboratory accreditation

Development and application of a quality system standard for construction materials testing laboratories (Spellerberg, PA, Trimm, WL, and Pielert, JH), Jan., 49 Evolution of the internal quality audit at Ford Motor Company's Central Laboratory (Terjimanian, A and Kelly, CJ), Jan., 37

National Institute for Certification in Engineering Technologies Certification: addressing the technician component of laboratory quality (Pao, C, Clark, MA, and Antrim, JD), Jan., 45

Third-party inspection agency response to changing needs (Kay, A), Jan., 32

### Large stone mixes

Precision of Marshall stability and flow test using 6-in. (152.4-mm) diameter

specimens (Kandhal, PS, Wu, Y, Parker, F, Jr., and Spellerberg, PA), Jan., 12

#### Latex condom

Two parameters limiting the sensitivity of laboratory tests of condoms as viral barriers (Lytle, CD, Routson, LB, Thomas, DP, Regnault, WF, and Cyr, WH), Sept., 279

### Latex gloves

Development of analytical methods for quantification of residual powder on powderless' latex gloves (Chen, ET, Hughes-Dillon, K, and Schroeder, LW), July, 229

### Life prediction

Fatigue under stress cycling with nonzero means (Gong, Y and Norton, MP), July, 263

#### Lifetime

Creep lifetime under constant load and constant stress: theory and experiment (Aktaa, J and Schinke, B), July, 212

#### Light alloys

Comparison of R-curve methodologies for ranking the toughness of aluminum alloys (Reynolds, AP), Nov., 406

### Long-term behavior

Time-dependent bending properties of lumber (Kliger, IR and Pellicane, PJ), May, 187

#### M

### Marshall stability

Precision of Marshall stability and flow test using 6-in. (152.4-mm) diameter specimens (Kandhal, PS, Wu, Y, Parker, F, Jr., and Spellerberg, PA), Jan., 12

### Masonry

Evaluation of test methods and environmental conditions to promote efflorescence formation under laboratory conditions (Vickers, T and Moukwa, M), March, 80

### Matchstick sensors

Accuracy of wood resistance sensors for measurement of humidity (Carll, C and TenWolde, A), May, 154

### Mechanical damping

Effect of fiber coating on the temperature dependence of the elastic and anelastic properties of a fiber-reinforced borosilicate glass matrix composite (Wolfenden, A, Thomas, HM, Thomas, V, and Chawla, KK), July, 237

### Mechanical properties

New approach to measuring transverse properties of structural tubing by a ring test (Arsene, S and Bai, J), Nov., 386

#### Mechanical testing

Creep lifetime under constant load and constant stress: theory and experiment (Aktaa, J and Schinke, B), July, 212 Critical evaluation of the performance of optical fiber sensors for monitoring dynamic strains (Singh, RP and Shukla, A), Sept., 295

Determination of the geometric profile and stress/strain state in the necked region during inelastic deformation at elevated temperatures using a non-contact measurement technique (Gaudig, W, Bothe, K, Bhaduri, AK, and Maile, K), May, 161 Minimum thickness requirements for Rockwell hardness testing (Heberling, TG, Fee, AR, and Tobolski, EL), March, 131

Structure and property evaluation of large-diameter spray-formed superalloy piping (Moran, AL and Rebis, RE), Sept., 302

### Metallography

Improved indentation-depth method of hardness measurement (Ezhov, YV), Sept., 320

### Mode I fracture testing

Fracture test method for Mode I fracture of thin metal materials (Cotterell, B, Sim, MC, Amrutharaj, G, and Teoh, SH), Sept., 316

### Ν

#### NICET

National Institute for Certification in Engineering Technologies Certification: addressing the technician component of laboratory quality (Pao, C, Clark, MA, and Antrim, JD), Jan., 45

### Nondestructive testing

Preliminary characterization of thermal diffusivity for carbon-carbon composites through pulsed video thermal imaging (Kulkarni, MR and Brady, RP), Sept., 275

### Nonlinear regression

Prediction of single-layer fabric air permeability by statistical modeling (Epps, HH), Jan., 26

#### **Normality**

Bias testing: myths, misconceptions, and mistakes (Gould, G), Sept., 333

## Nuclear technology

Initial deformation during small punch testing (Cheon, JS and Kim, IS), July, 255

### 0

#### Optical fiber sensors

Critical evaluation of the performance of optical fiber sensors for monitoring

dynamic strains (Singh, RP and Shukla, A), Sept., 295

#### **Organics**

Performance of zirconium and zirconium alloys in organics (Yau, T-L), March, 110

#### Oxidation

Creep testing of steels at very high temperatures (Lindblom, J, Seitisleam, F, and Henderson, PJ), Sept., 329

P

#### **Packaging**

Effects of fatigue on fragility testing and the damage boundary curve (Burgess, G), Nov., 419

Leakers as a function of closure type in gallon-size plastic bottles in simulated small parcel test environment (Singh, SP and Syal, VP), July, 241

Measurement and analysis of the overnight small package shipping environment for Federal Express and United Parcel Service (Singh, SP and Cheema A), July, 205

### Personal flotation devices

Color change as a predictor of strength loss in PFD cover fabrics (Epps, HH and Leonas, KK), Nov., 392

#### pН

Fly ash as a pre-filter material for the retention of lead ions (Pandian, NS, Rajasekhar, C, and Sridharan, A), May, 181

#### Piping

Structure and property evaluation of large-diameter spray-formed superalloy piping (Moran, AL and Rebis, RE), Sept., 302

### Plane surveying

Modified theodolite instrument: conceptual work (Obaidat, MT and Al-Smadi, ZA), May, 194

### Plastic bottles

Leakers as a function of closure type in gallon-size plastic bottles in simulated small parcel test environment (Singh, SP and Syal, VP), July, 241

#### Plate

Ti roll-clad plate: more cost-effective plate products for utilizing titanium and zirconium alloys in chemical processes (Schutz, RW), March, 96

### **Polishes**

High-resolution force plate analysis of utilized slip resistance in human walking (Buczek, FL, Jr. and Banks, SA), Nov., 353

International symposium on slip resistance: The interface of man, footwear,

and walking surfaces (Sacher, A and Owens, JM), Nov., 351

Required coefficient of friction versus walking speed: potential influences of footwear and walkway surfaces (Fendley, AE and Marpet, MI), Nov., 359

Slip resistance characteristics of footwear solings assessed using the SATRA friction tester (Wilson, M), Nov., 377

Surface roughness of footwear soling materials: relevance to slip resistance (Rowland, FJ, Jones, C, and Manning, DP), Nov., 368

### Prestressed concrete

Cyclic tests on high-strength prestressed concrete frames (Mo, YL and Hwang, WL), May, 168

### Protective clothing

Objective assessment of fabric handle in fabrics treated with flame retardants (Kim, JO and Slaten, BL), July, 223 Two parameters limiting the sensitivity of laboratory tests of condoms as viral barriers (Lytle, CD, Routson, LB, Thomas, DP, Regnault, WF, and Cyr, WH), Sept., 279

### Pulp/paper

Expanded windows for titanium use in the pulp/paper peroxide bleach plant (Schutz, RW and Xiao, M), March, 119

### Pulsed video thermography (PVT)

Preliminary characterization of thermal diffusivity for carbon-carbon composites through pulsed video thermal imaging (Kulkarni, MR and Brady, RP), Sept., 275

Q

#### **Quality assurance**

Development and application of a quality system standard for construction materials testing laboratories (Spellerberg, PA, Trimm, WL, and Pielert, JH), Jan., 49 Evolution of the internal quality audit at Ford Motor Company's Central Laboratory (Terjimanian, A and Kelly, CJ), Jan., 37

National Institute for Certification in Engineering Technologies Certification: addressing the technician component of laboratory quality (Pao, C, Clark, MA, and Antrim, JD), Jan., 45

R

### R curve

Comparison of R-curve methodologies for ranking the toughness of aluminum alloys (Reynolds, AP), Nov., 406

#### Reactive alloys

Development and applications of titanium alloy SP-700 with high formability (Ogawa, A, Niikura, M, Ouchi, C, Minikawa, K, and Yamada, M), March, 100 Performance of zirconium and zirconium alloys in organics (Yau, T-L), March, 110

#### Reactive metals

Commercial applications of zirconium explosion clad (Banker, JG), March, 91 Empirical determination of the manufacturing processes which affect EFP liner performance (Faccini, EC and Woodbury, HA), March, 123

Introduction to Journal section on industrial applications of titanium and zirconium (Grauman, JS and Webster, RT), March, 84

Ti roll-clad plate: more cost-effective plate products for utilizing titanium and zirconium alloys in chemical processes (Schutz, RW), March, 96

Titanium cerebral aneurysm clips: characterization and performance in magnetic resonance imaging and computed tomography (Ho, JC, Wu, CY, Carron, MJ, Maughan, KP, and Schmidt, FJ), March, 85

#### Regulatory compliance

Third-party inspection agency response to changing needs (Kay, A), Jan., 32

### Relative humidity

Accuracy of wood resistance sensors for measurement of humidity (Carll, C and TenWolde, A), May, 154

Evaluation of test methods and environmental conditions to promote efflorescence formation under laboratory conditions (Vickers, T and Moukwa, M), March, 80

#### Residual glove powder

Development of analytical methods for quantification of residual powder on 'powderless' latex gloves (Chen, ET, Hughes-Dillon, K, and Schroeder, LW), July, 229

### Retention

Fly ash as a pre-filter material for the retention of lead ions (Pandian, NS, Rajasekhar, C, and Sridharan, A), May, 181

### Road paving materials

Precision of Marshall stability and flow test using 6-in. (152.4-mm) diameter specimens (Kandhal, PS, Wu, Y, Parker, F, Jr., and Spellerberg, PA), Jan., 12

#### Rubber

Development of analytical methods for quantification of residual powder on 'powderless' latex gloves (Chen, ET, Hughes-Dillon, K, and Schroeder, LW), July, 229

S

#### Safety (footwear)

Comparison of walkway-safety tribometers (Marpet, M), July, 245

#### Sample size

Bias testing: myths, misconceptions, and mistakes (Gould, G), Sept., 333

### Sensory evaluation

Accuracy of wood resistance sensors for measurement of humidity (Carll, C and TenWolde, A), May, 154

#### Shock

Measurement and analysis of the overnight small package shipping environment for Federal Express and United Parcel Service (Singh, SP and Cheema A), July, 205

#### Shock fragility

Effects of fatigue on fragility testing and the damage boundary curve (Burgess, G), Nov., 419

#### Sliding wear

Unlubricated sliding wear of steels: the contact conditions in the sliding zone (Bian, S, Maj, S, and Borland, DW), Jan., 12

#### Slip resistance

High-resolution force plate analysis of utilized slip resistance in human walking (Buczek, FL, Jr. and Banks, SA), Nov., 353

International symposium on slip resistance: the interface of man, footwear, and walking surfaces (Sacher, A and Owens, JM), Nov., 351

Slip resistance characteristics of footwear solings assessed using the SATRA friction tester (Wilson, M), Nov., 377

Surface roughness of footwear soling materials: relevance to slip resistance (Rowland, FJ, Jones, C, and Manning, DP), Nov., 368

### Small parcel shipping

Leakers as a function of closure type in gallon-size plastic bottles in simulated small parcel test environment (Singh, SP and Syal, VP), July, 241

#### Small punch test

Initial deformation during small punch testing (Cheon, JS and Kim, IS), July, 255

#### Solder

Creep rupture investigation of 63Sn-37Pb solder by experiments and damage mechanics (Ju, S-H, Sandor, B, and Plesha, ME), Nov., 411

### SP-700 alloy

Development and applications of titanium alloy SP-700 with high formability (Ogawa, A, Niikura, M, Ouchi, C, Minikawa, K, and Yamada, M), March, 100

#### Spray forming

Structure and property evaluation of large-diameter spray-formed superalloy piping (Moran, AL and Rebis, RE), Sept., 302

### Steels

Creep testing of steels at very high temperatures (Lindblom, J, Seitisleam, F, and Henderson, PJ), Sept., 329

Unlubricated sliding wear of steels: the contact conditions in the sliding zone (Bian, S, Maj, S, and Borland, DW), Jan., 12

#### Stiffness

Objective assessment of fabric handle in fabrics treated with flame retardants (Kim, JO and Slaten, BL), July, 223

#### Strain gages

Critical evaluation of the performance of optical fiber sensors for monitoring dynamic strains (Singh, RP and Shukla, A), Sept., 295

#### Stress-skin panels

Time-dependent bending properties of lumber (Kliger, IR and Pellicane, PJ), May, 187

### Supercritical fluid extraction

Extraction and determination of Azadirachtin from soil and insects by supercritical fluid extraction (Brooks, MW, Roy, S, Uden, PC, and Vittum, P), May, 149

#### Surface roughness

Surface roughness of footwear soling materials: relevance to slip resistance (Rowland, FJ, Jones, C, and Manning, DP), Nov., 368

### Surveying

Modified theodolite instrument: conceptual work (Obaidat, MT and Al-Smadi, ZA), May, 194

## T

### T66/103

Surface roughness of footwear soling materials: relevance to slip resistance (Rowland, FJ, Jones, C, and Manning, DP), Nov., 368

#### Taguchi method

Empirical determination of the manufacturing processes which affect EFP liner performance (Faccini, EC and Woodbury, HA), March, 123

### Temperature pattern

Diagnosis of machinery by analysis of running temperature data (Segal, L), July, 268

#### Tension testing

Determination of the geometric profile and stress/strain state in the necked region during inelastic deformation at elevated temperatures using a non-contact measurement technique (Gaudig, W, Bothe, K, Bhaduri, AK, and Maile, K), May, 161

### Test procedures

Evaluation of test methods and environmental conditions to promote efflorescence formation under laboratory conditions (Vickers, T and Moukwa, M), March, 80

#### **Testing machines**

Optimal design of a disk-shaped specimen for biaxial-tensile fatigue testing (Zouani, A, Bui-Quoc, T, and Bernard, M), Sept., 287

#### **Textiles**

Color change as a predictor of strength loss in PFD cover fabrics (Epps, HH and Leonas, KK), Nov., 392

Prediction of single-layer fabric air permeability by statistical modeling (Epps, HH), Jan., 26

#### **Theodolite**

Modified theodolite instrument: conceptual work (Obaidat, MT and Al-Smadi, ZA), May, 194

### Thermal diagnosis

Diagnosis of machinery by analysis of running temperature data (Segal, L), July, 268

### Thermal diffusivity

Preliminary characterization of thermal diffusivity for carbon-carbon composites through pulsed video thermal imaging (Kulkarni, MR and Brady, RP), Sept., 275

### Thermal measurements

Diagnosis of machinery by analysis of running temperature data (Segal, L), July, 268

### **Thickness**

Minimum thickness requirements for Rockwell hardness testing (Heberling, TG, Fee, AR, and Tobolski, EL), March, 131

### Thin materials

Fracture test method for Mode I fracture of thin metal materials (Cotterell, B, Sim, MC, Amrutharaj, G, and Teoh, SH), Sept., 316

### Third-party inspection

Third-party inspection agency response to changing needs (Kay, A), Jan., 32

#### Titanium

Introduction to Journal section on industrial applications of titanium and zirconium (Grauman, JS and Webster, RT), March, 84

Ti roll-clad plate: more cost-effective plate products for utilizing titanium and zirconium alloys in chemical processes (Schutz, RW), March, 96

Titanium cerebral aneurysm clips: characterization and performance in magnetic resonance imaging and computed tomography (Ho, JC, Wu, CY, Carron, MJ, Maughan, KP, and Schmidt, FJ), March, 85

### Titanium alloy

Development and applications of titanium alloy SP-700 with high formability (Ogawa, A, Niikura, M, Ouchi, C, Minikawa, K, and Yamada, M), March, 100

### Top-piece

Required coefficient of friction versus walking speed: potential influences of footwear and walkway surfaces (Fendley, AE and Marpet, MI), Nov., 359

### Transverse mechanical properties

New approach to measuring transverse properties of structural tubing by a ring test (Arsene, S and Bai, J), Nov., 386

#### Trusses

Testing and evaluation of metal-plate-connected wood truss joints (Vatovec, M, Gupta, R, and Miller, T), March, 63

### **Tubular pipes**

New approach to measuring transverse properties of structural tubing by a ring test (Arsene, S and Bai, J), Nov., 386

#### W

#### Walking surfaces

International symposium on slip resistance: the interface of man, footwear, and walking surfaces (Sacher, A and Owens, JM), Nov., 351

Required coefficient of friction versus walking speed: potential influences of footwear and walkway surfaces (Fendley, AE and Marpet, MI), Nov., 359

#### Walkway safety

Comparison of walkway-safety tribometers (Marpet, MI), July, 245

#### Wear testing

Unlubricated sliding wear of steels: the contact conditions in the sliding zone (Bian, S, Maj, S, and Borland, DW), Jan., 12

### Wood

Testing and evaluation of metal-plateconnected wood truss joints (Vatovec, M, Gupta, R, and Miller, T), March, 63 Time-dependent bending properties of lumber (Kliger, IR and Pellicane, PJ), May, 187

#### Y-Z

### Young's modulus

Effect of fiber coating on the temperature dependence of the elastic and anelastic properties of a fiber-reinforced borosilicate glass matrix composite (Wolfenden, A, Thomas, HM, Thomas, V, and Chawla, KK), July, 237

#### Zirconium

Commercial applications of zirconium explosion clad (Banker, JG), March, 91 Introduction to Journal section on industrial applications of titanium and zirconium (Grauman, JS and Webster, RT), March, 84

Performance of zirconium and zirconium alloys in organics (Yau, T-L), March, 110 Ti roll-clad plate: more cost-effective plate products for utilizing titanium and zirconium alloys in chemical processes (Schutz, RW), March, 96