Journal of Testing and Evaluation Subject Index to Volume 6 1978

A

Acoustics

Composite grip design for elimination of extraneous noise during acoustic emission testing (Wood and Dilipkumar), Nov., 371

Aggregates

Polishing characteristics of common rock types used as aggregate in bituminous pavement surfaces (Dahir and Meyer), Jan., 52

Alignment

Powder-cushion gripping to promote good alignment in tensile testing (Lange and Diaz), Sept., 320

Aluminum alloys

Comparison of stress corrosion cracking properties of several aircraft structural alloys (Ryder, Krupp, Pettit, and Hoeppner), March, 120

Effect of interference on the dimpled, loaded-hole fatigue strength of 2024-T3 Alclad® aluminum alloy (Kuc and Shewchuk), May, 157

Fatigue crack arrest at low stress intensities in a corrosive environment (Nordmark and Fricke), Sept., 301

Marine atmosphere stress corrosion tests on precracked specimens from highstrength aluminum alloys: effect of corrosion-product wedging (Dorward, Hasse, and Helfrich), July, 268

Amphiboles

Interlaboratory measurements of amphibole and chrysotile fiber concentration in water (Chopra), July, 241

Aquatic biology

Field and laboratory protocols for evaluating the effects of chemical substances on aquatic life (Cairns and Dickson), March, 81

В

Background

Composite grip design for elimination of extraneous noise during acoustic emission testing (Wood and Dilipkumar), Nov., 369

Bending

Surface-crack shape change in bending fatigue using an inexpensive resonant fatiguing apparatus (Pierce and Shannon), May, 183

Bend tests

Comparison of equivalent energy and energy per unit area (W/A) data with valid fracture toughness data for iron, aluminum, and titanium alloys (Witzke and Stephens), Jan., 75

Load-displacement measurement and work determination in three-point bend tests of notched or precracked specimens (Buzzard and Fisher), Jan., 35

Bend tests

Mechanical properties in bending at elevated temperature of high strength copper alloy flat spring materials (Fox and Fuchs), May, 211

Bonding

Holographic interferometry study of chemical bond of concrete to smooth steel rods (Nathan, Mehta, and Selvarajan), July, 284

Breaking

Mathematical model for the determination of the breakage distribution in batch grinding (Tomlinson, Venter, de Malherbe, and Lees), Sept., 304

Bricks

Indirect tensile test for masonry units (Borchelt and Brown), March, 134

Measurement of linear expansion in bricks due to freezing (Davison and Sereda), March, 144

Buckling

Some parameters influencing the release pressure of reverse-buckling safety disks (Beese), Sept., 315

C

Calibrating

Calibration of the side-grooved modified wedge-opening-load specimen (LeFort and Mowbray), March, 114

Design and performance of a deadweight standard Rockwell hardness testing machine (Barbato, Desogus, and Levi), July, 276

Carbon arcs

Development of light- and water-exposure apparatus (Suga), Nov., 341

Cavitatio

Studies on the characteristics of erosion with plain jets and jets with cavitation inducers (Syamala Rao and Janakiram), Nov., 332

Chemical analysis

Phase extraction and analysis in superalloys—second summary of investigations by ASTM Subcommittee E04.91 (Donachie), May, 189

Clays

Effects of dispersion and swelling on soil hydraulic conductivity (Frenkel and Rhoades), Jan., 60

Comminution

Mathematical model for the determination of the breakage distribution in batch grinding (Tomlinson, Venter, de Malherbe, and Lees), Sept., 304

Composite materials

"Instantaneous" effect of internal moisture conditions on the strength of glass-fiber-reinforced plastics (Ishai and Arnon), Nov., 364

Low energy impact behavior of composite panels (Aleszka), May, 202

Concrete products

Indirect tensile test for masonry units (Borchelt and Brown), March, 134

Use of pelletized slag in concrete masonry units (Cotsworth), March, 148

Contaminants

Respirable fraction of airborne dust: quantitative descriptions, formal definitions, and performance characteristics of samplers matched to them (Mercer), Jan., 9

Copper

Proportional biaxial cyclic hardening of annealed oxygen-free high-conductivity copper (Lamba and Sidebottom), July, 260

Copper alloys

Mechanical properties in bending at elevated temperature of high strength copper alloy flat spring materials (Fox and Fuchs), May, 211

Corrosion environments

Marine atmosphere stress corrosion tests on precracked specimens from highstrength aluminum alloys: effect of corrosion-product wedging (Dorward, Hasse, and Helfrich), July, 268

Corrosion fatigue

Frequency, stress ratio, and potential effects on fatigue crack growth of HY130 steel in salt water (Vosikovsky), May, 175

Threshold corrosion fatigue crack growth in steels (Tu and Seth), Jan., 66

Cotton fibers

Comparison of cotton fiber fineness and maturity on air-flow instruments (Lawson and Ramey), July, 248

Crack initiation

Tapered tensile specimen for stress corrosion threshold stress testing (Jonas), Jan., 40

Crack propagation

Calibration of the side-grooved modified wedge-opening-load specimen (LeFort and Mowbray), March, 114

Computer-controlled decreasing stress intensity technique for low rate fatigue crack growth testing (Saxena, Hudak, Donald, and Schmidt), May, 167

Effect of temperature on stress corrosion cracking of 300M steel (Ryder and Pickel), March, 129

Frequency, stress ratio, and potential effects on fatigue crack growth of HY130 steel in salt water (Vosikovsky), May, 175

Impact three-point bend testing for notched and precracked specimens (Server), Jan., 29

Summary and comparison of *J* estimation procedures (Chipperfield), July, 253

Surface-crack shape change in bending fatigue using an inexpensive resonant fatiguing apparatus (Pierce and Shannon), May, 183 Crack propagation

Threshold corrosion fatigue crack growth in steels (Tu and Seth), Jan., 66

Cracks

Fracture toughness evaluation of polymers with surface-crack specimens (Mai), Nov., 347

D

Deflection

New method of test for flexural fatigue of plastics (Gauvin and Trotignon), Jan., 48

Deformation

Mechanical properties in bending at elevated temperature of high strength copper alloy flat spring materials (Fox and Fuchs), May, 211

Dispersions

Effects of dispersion and swelling on soil hydraulic conductivity (Frenkel and Rhoades), Jan., 60

Displacement

Displacement coefficients along the inner boundaries of radially cracked ring segments subject to forces and couples (Gross), May, 196

Dust

Particle-size distribution in AC fine test dust (Johnston), March, 103

E

Elastic properties

Compariosn of equivalent energy and energy per unit area (\overline{W}/A) data with valid fracture toughness data for iron, aluminum, and titanium alloys (Witzke and Stephens), Jan., 75

Evaluation of correction methods for determining load-independent Knoop microhardness (Young and Rhee), May, 221

Erosion

Studies on the characteristics of erosion with plain jets and jets with cavitation inducers (Syamala Rao and Janakiram), Nov., 332

Eutectics

Volume fraction determination in cast superalloys and directionally solidified eutectic alloys by a new manual point count practive (Andrews), Jan., 20

F

Fatigue (materials)

Computer-controlled decreasing stress intensity technique for low rate fatigue crack growth testing (Saxena, Hudak, Donald, and Schmidt), May, 167

Effect of interference on the dimpled, loaded-hole fatigue strength of 2024-T3 Alclad® aluminum alloy (Kuc and Shewchuk), May, 157

Fatigue crack arrest at low stress intensities in a corrosive environment (Nordmark and Fricke), Sept., 301

Influence of material property variations on the assessment of structural integrity of nuclear components (Chirigos and Meyer), Sept., 289

Fiber composites

'Instantaneous' effect of internal moisture conditions on the strength of glass-fiber-reinforced plastics (Ishai and Arnon), Nov., 364

Field tests

Field and laboratory protocols for evaluating the effects of chemical substances on aquatic life (Cairns and Dickson), March, 81

Filtration

Determining filtration efficiency by comparing the particle-size distribution in the feed stream to that in the filtrate (Johnston), Sept., 311

Fineness

Comparison of cotton fiber fineness and maturity on air-flow instruments (Lawson and Ramey), July, 248

Flexural strength

New method of test for flexural fatigue of plastics (Gauvin and Trotignon), Jan. 48 Fluid filters

Determining filtration efficiency by comparing the particle-size distribution in the feed stream to that in the filtrate (Johnston), Sept., 311

Particle-size distribution in AC fine test dust (Johnston), March, 103

Fracture properties

Fracture toughness evaluation of polymers with surface-crack specimens (Mai), Nov., 347

Fractures (materials)

Assessment of reactor pressure vessel irradiated materials considerations (Stahlkopf and Marston), March, 108

Cooperative plane strain fracture toughness tests with C-shaped specimens (Underwood and Kendall), Sept., 296

Displacement coefficients along the inner boundaries of radially cracked ring segments subject to forces and couples (Gross), May, 196

Impact three-point bend testing for notched and precracked specimens (Server), Jan., 29

Summary and comparison of *J* estimation procedures (Chipperfield), July, 253

Surface-crack shape change in bending fatigue using an inexpensive resonant fatiguing apparatus (Pierce and Shannon), May, 183

Fracture strength

Comparison of equivalent energy and energy per unit area (\overline{W}/A) data with valid fracture toughness data for iron, aluminum, and titanium alloys (Witzke and Stephens), Jan., 75

Fracture toughness of stretched acrylic plastic (Sutton), Nov., 356

Freezing

Measurement of linear expansion in bricks due to freezing (Davison and Sereda), March, 144

G

Grinding (comminution)

Mathematical model for the determination of the breakage distribution in batch grinding (Tomlinson, Venter, de Malherbe, and Lees), Sept., 304 Н

Hardening (materials)

Proportional biaxial cyclic hardening of annealed oxygen-free high-conductivity copper (Lamba and Sidebottom), July, 260

Hardness tests

Design and performance of a deadweight standard Rockwell hardness testing machine (Barbato, Desogus, and Levi), July, 276

Heat resistant alloys

Phase extraction and analysis in superalloys—second summary of investigations by ASTM Subcommittee E04.91 (Donachie), May, 189

High temperature tests

Short-time, high temperature mechanical testing facility (Marion), Jan., 3

I

Impact shock

Evaluation of cushion dynamic properties by impedance measurements (Nassar), May, 231

Impact strength

Low energy impact behavior of composite panels (Aleszka), May, 202

Impact tests

Impact three-point bend testing for notched and precracked specimens (Server), Jan., 29

Studies on the characteristics of erosion with plain jets and jets with cavitation inducers (Syamala Rao and Janakiram), Nov., 332

Industrial atmospheres

Respirable fraction of airborne dust: quantitative descriptions, formal definitions, and performance characteristics of samplers matched to them (Mercer), Jan., 9

Insulation

Evaluation of cushion dynamic properties by impedance measurements (Nassar), May, 231

Interferometers

Holographic interferometry study of chemical bond of concrete to smooth steel rods (Nathan, Mehta, and Selvarajan), July, 284

K

Knoop hardness

Evaluation of correction methods for determining load-independent Knoop microhardness (Young and Rhee), May, 221

L

Loads (forces)

Displacement coefficients along the inner boundaries of radially cracked ring segments subject to forces and couples (Gross), May, 196

Effect of interference on the dimpled, loaded-hole fatigue strength of 2024-T3 Alclad® aluminum alloy (Kuc and Shewchuk), May, 157

Loads (forces)

Load-displacement measurement and work determination in three-point bend tests of notched or precracked specimens (Buzzard and Fisher), Jan., 35

Low energy impact behavior of composite panels (Aleszka), May, 202

Proportional biaxial cyclic hardening of annealed oxygen-free high-conductivity copper (Lamba and Sidebottom), July, 260

M

Masonry

Indirect tensile test for masonry units (Borchelt and Brown), March, 134

Use of pelletized slag in concrete masonry units (Cotsworth), March, 148

Measuring instruments

Comparison of cotton fiber fineness and maturity on air-flow instruments (Lawson and Ramey), July, 248

Mechanical properties

Fracture toughness of stretched acrylic plastic (Sutton), Nov., 356

Influence of material property variations on the assessment of structural integrity of nuclear components (Chirigos and Meyer), Sept., 289

Mechanical tests

Short-time, high temperature mechanical testing facility (Marion), Jan., 3

Metal sheets

Improvement of sheet metal strength by localized thermal shocks (Trasi and Hsu), July, 280

Microhardness

Evaluation of correction methods for determining load-independent Knoop microhardness (Young and Rhee), May, 221

N

Nickel alloys

Volume fraction determination in cast superalloys and directionally solidified eutectic alloys by a new manual point count practice (Andrews), Jan., 20

Noise reduction

Composite grip design for elimination of extraneous noise during acoustic emission testing (Wood and Dilipkumar), Nov., 369

Nuclear reactors

Assessment of reactor pressure vessel irradiated materials considerations (Stahlkopf and Marston), March, 108

Influence of material property variations on the assessment of structural integrity of nuclear components (Chirigos and Meyer), Sept., 289

p

Particle size distribution

Determining filtration efficiency by comparing the particle-size distribution in the feed stream to that in the filtrate (Johnston), Sept., 311

Partice-size distribution in AC fine test dust (Johnston), March, 103

Pavements

Polishing characteristics of common rock types used as aggregate in bituminous pavement surfaces (Dahir and Meyer), Jan., 52

Pitting

Tapered tensile specimen for stress corrosion threshold stress testing (Jonas), Jan., 40

Plastics

New method of test for flexural fatigue of plastics (Gauvin and Trotignon), Jan., 48 Polishing

Polishing characteristics of common rock types used as aggregate in bituminous pavement surfaces (Dahir and Meyer), Jan., 52

Polymers

Fracture toughness evaluation of polymers with surface-crack specimens (Mai), Nov., 347

Portable equipment

"PARS"—a portable X-ray analyzer for residual stresses (James and Cohen), March, 91

Pressure

Some parameters influencing the release pressure of reverse-buckling safety disks (Beese), Sept., 315

R

Radiation damage

Assessment of reactor pressure vessel irradiated materials considerations (Stahlkopf and Marston), March, 108

Reinforced concrete

Holographic interferometry study of chemical bond of concrete to smooth steel rods (Nathan, Mehta, and Selvarajan), July, 284

Residual stress

"PARS"—a portable X-ray analyzer for residual stresses (James and Cohen), March, 91

Resistance heating

Short-time, high temperature mechanical testing facility (Marion), Jan., 3

Respiration

Respirable fraction of airborne dust: quantitative descriptions, formal definitions, and performance characteristics of samplers matched to them (Mercer), Ian 9

Jan., 9 Rockwell hardness

Design and performance of a deadweight standard Rockwell hardness testing machine (Barbato, Desogus, and Levi), July, 276

S

Safety

Some parameters influencing the release pressure of reverse-buckling safety disks (Beese), Sept., 315

Serpentine

Interlaboratory measurements of amphibole and chrysotile fiber concentration in water (Chopra), July, 241

Slags

Use of pelletized slag in concrete masonry units (Cotsworth), March, 148

Solids

Measuring the thermal expansion of solids with strain gages (Poore and Kesterson), March, 98

Spectral energy distribution

Development of light- and water-exposure apparatus (Suga), Nov., 341

Static tests

Calibration of the side-grooved modified wedge-opening-load specimen (LeFort and Mowbray), March, 114

Steels

Comparison of stress corrosion cracking properties of several aircraft structural alloys (Ryder, Krupp, Pettit, and Hoeppner), March, 120

Effect of temperature on stress corrosion cracking of 300M steel (Ryder and

Pickel), March, 129

Frequency, stress ratio, and potential effects on fatigue crack growth of HY130 steel in salt water (Vosikovsky), May, 175

Threshold corrosion fatigue crack growth in steels (Tu and Seth), Jan., 66

Strain gages

Measuring the thermal expansion of solids with strain gages (Poore and Kesterson), March, 98

Strains

Cooperative plane strain fracture toughness tests with C-shaped specimens (Underwood and Kendall), Sept., 296

Stress analysis from temperature data (Jordan and Sandor), Nov., 325

Stress analysis

Stress analysis from temperature data (Jordan and Sandor), Nov., 325

Stress concentration

Powder-cushion gripping to promote good alignment in tensile testing (Lange and Diaz), Sept., 320

Stress corrosion

Comparison of stress corrosion cracking properties of several aircraft structural alloys (Ryder, Krupp, Pettit, and Hoeppner), March, 120

Effect of temperature on stress corrosion cracking of 300M steel (Ryder and Pickel). March, 129

Marine atmosphere stress corrosion tests on precracked specimens from highstrength aluminum alloys: effect of corrosion-product wedging (Dorward, Hasse, and Helfrich), July, 268

Tapered tensile specimen for stress corrosion threshold stress testing (Jonas), Jan., 40

Stresses

Computer-controlled decreasing stress intensity technique for low rate fatigue crack growth testing (Saxena, Hudak, Donald, and Schmidt), May, 167

Fatigue crack arrest at low stress intensities in a corrosive environment (Nordmark and Fricke), Sept., 301

Improvement of sheet metal strength by localized thermal shocks (Trasi and Hsu), July, 280

Summary and comparison of *J* estimation procedures (Chipperfield), July, 253

Swelling

Effects of dispersion and swelling on soil hydraulic conductivity (Frenkel and Rhoades), Jan., 60

378 SUBJECT INDEX

T

Temperature measurement

Stress analysis from temperature data (Jordan and Sandor), Nov., 325

Tensile strength

"Instantaneous" effect of internal moisture conditions on the strength of glass-fiber-reinforced plastics (Ishai and Arnon), Nov., 364

Tension tests

Powder-cushion gripping to promote good alignment in tensile testing (Lange and Diaz), Sept., 320

Thermal expansion

Measurement of linear expansion in bricks due to freezing (Davison and Sereda), March, 144

Measuring the thermal expansion of solids with strain gages (Poore and Kesterson), March, 98

Thermal shock

Improvement of sheet metal strength by localized thermal shocks (Trasi and Hsu), July, 280

Toughness

Cooperative plane strain fracture toughness tests with C-shaped specimens (Underwood and Kendall), Sept., 296 Toughness

Fracture toughness of stretched acrylic plastic (Sutton), Nov., 356

V

Vibration tests

Evaluation of cushion dynamic properties by impedance measurements (Nassar), May, 231

Volume

Volume fraction determination in cast superalloys and directionally solidified eutectic alloys by a new manual point count practice (Andrews), Jan., 20

W

Water pollution

Field and laboratory protocols for evaluating the effects of chemical substances on aquatic life (Cairns and Dickson), March, 81 Water quality

Interlaboratory measurement of amphibole and chrysotile fiber concentration in water (Chopra), July, 241

Work

Load-displacement measurement and work determination in three-point bend tests of notched or precracked specimens (Buzzard and Fisher), Jan., 35

X

X ray diffraction

Phase extraction and analysis in superalloys—second summary of investigations by ASTM Subcommittee E04.91 (Donachie), May, 189

X ray stress analysis

'PARS''—a portable X-ray analyzer for residual stresses (James and Cohen), March, 91

Xenon

Development of light- and water-exposure apparatus (Suga), Nov., 341