# Product Catalog













Material Characterization At Its Best!™

**Viscometers** 

**Rheometers** 

**Texture Analyzers** 

**Powder Flow Testers** 

Moisture

2021

Gas

# **AMETEK Brookfield** Material Characterization at Its Best™

Go beyond viscosity with AMETEK Brookfield!

AMETEK Brookfield has been the world leader in viscosity measurement instruments for over 85 years. Our expanding portfolio includes viscosity, rheology, texture, powder, moisture, and toxic gas instruments for accurate material characterization measurements, making our instruments ideal for a variety of applications in many industries. We have Centers of Excellence located throughout the world and a network of qualified service and training representatives and dealers. It's no wonder research labs, QC departments, and production environments around the globe count on AMETEK Brookfield's instruments for repeatable and accurate measurements.



# History of AMETEK Brookfield



- Brookfield Engineering was founded.
- First Dial Viscometer becomes lab standard used globally.



1980

DV1 was launched.

1986

DV2 was introduced.

1992

DV3 was launched.

1993

Introduction of Rheocalc software. 1994

Capcalc software was launched.

1995

Wingather software was launched.

1996

1978

Release of TT100

line of products.

Launch of PVS.

1997

CAP2000 was launched.

1998

**David Brookfield** became CEO.

# 1999

- Office moved from Stoughton, MA to Middleboro, MA.
- Electronic Dial instrument introduced.

2001

Rheovision software was launched.



- Launch of CAP1000.
- Brookfield became ISO 9001 certified.

2003

AST was launched.

2008

TexturePro software and CT3 were launched. 2009

- PFT and Power Flow Pro software were launched.
- Celebrated 75th anniversary.

2013

- RheoCalcT software, DV2T, and DV3T were launched.
- Lou DiCorpo received 60 Year Service Award.

#### **AMETEK®**

2016

AMETEK acquired Brookfield.

2017

AMETEK acquired Arizona Instrument. 2018

CTX and TT100 IECEx were launched.

**DVNext and RSO** were launched.

Launch of Computrac® Vapor Pro® XL Autosampler.

REV. E

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# Food & Beverages



Ground Cinnamon

Cheese Puffs





Corn Starch



Baking Soda



Brownie Mix



Almonds



Mayonnaise



**Cooked Meat** 



Bread

Coffee



Apple Juice



Chocolate





Chips

# Pharmaceutical, Medical & Personal Care



Baby Formula



Facial Powder



Petroleum Jelly





Eye Liner

**Tablets** 



Shampoo

Cough Syrup



Soap



Hair Gel

# Plastics, Chemicals, Paints & Inks



**Paints** 



Bentonite Clay



Chemicals



Flooring Adhesives

**Auto Paints** 



Gypsum



Curing or Gelling Materials

# Energy, Oil, Gas, **Environmental & Education**



Wastewater Treatment



Industrial Hygiene



Oil Industries



Powerplants



Landfills



Universities



Mining



Batteries



Environmental Agencies

First Responders



Gases



**Biomass** 

# Repeatability and Accuracy

AMETEK Brookfield's instruments are the most accurate and repeatable on the market. For decades, customers have relied on consistent, precise measurements from our instruments in the most demanding environments. Measurements taken today with an AMETEK Brookfield instrument will typically match results years from now.



# 21 CFR, Part 11 and GAMP® Compliant

The DVNext Rheometer is AMETEK Brookfield's newest, easy-to-use, all-in-one tool for viscosity and yield stress measurements!



# RSO brings viscoelasticity measurements within your reach!

Our Oscillatory Rheometer is AMETEK Brookfield's newest, easy-to-use, stand-alone instrument for advanced viscoelastic measurements.

# Viscometers

Torque measurement accuracy: 1% of full-scale range Repeatability: 0.2% of full-scale range



#### Our 21 CFR, Part 11 Compliant Viscometer

- 21 CFR, Part 11 Compliant
- Digital leveling
- LIMS connectivity
- Gel-timer functionality
- Hand-held scanner for bar code detection
- Accessory detection
- Magnetic coupling attachment

#### Recommended Software:

• RheocalcT



# **DVNext Cone/Plate**

#### Our Latest Viscometer for Small Sample Sizes

- Small sample size
- Defined shear rate
- Electronic gap adjustment
- Touch screen display
- Auto-zero function
- Auto-range function

#### Recommended Software:

• RheocalcT



## **DVNext**

#### Our Latest Full-Featured Viscometer

- Digital leveling
- Start-up wizard
- Gel-timer functionality
- Optional magnetic coupling attachment
- Optional bar code scanner

#### Recommended Software:

RheocalcT



## DV2T

#### **Full-Featured Viscometer**

- 5-inch touch screen
- Built-in temp probe
- Data/user security controls
- USB PC interface available

#### **Recommended Software:**

- RheocalcT
- PG Flash



## **DV2T Gel Timer**

#### Full-Featured Viscometer with Gel Timer

- Continuous torque-sensing capability
- Displays gel time and continuous temperature readout
- Glass rod fits snugly into compression-fit coupling
- Control immersion depth of glass rod
- Test runs automatically using time-to-torque feature

#### Recommended Software:

- RheocalcT
- PG Flash



## DV1

#### Our Workhorse QC Viscometer

- Optional temp probe
- Calculates viscosity
- Access to time measurement function
- Output connection to printer

#### Recommended Software:

Wingather SQ



## **DVE**

#### Our Budget QC Viscometer

- Low cost and easy to use
- Calculates viscosity
- Direct display in cp or maps,
   % torque, spindle, and speed
- 18 speeds for greater range capability



## CAP2000+

#### Viscometer Specific for Paints and Coatings

- Broad shear rate range
- Peltier temp control
- Excellent for paints and coatings

#### Recommended Software:

Capcalc

# Accessories



# **Enhanced UL Adapter**

Designed for Low Viscosity Materials

- Multiple test options
- Automated analysis
- Compact design



# **Helipath Stand**

Accessory Specific for Gels and Creams

- Multiple test options
- Automated analysis
- Compact design
- Ideal for measuring non-flowing substances



# Small Sample Adapter

Ideal for Small Samples

- For rheological material evaluation using limited sample volumes
- Sample chamber easily changed
- Optional disposable chamber
- Rapid sample temperature control



# **DIN Adapter**

Ideal for Small Sample Volumes

- Complies with DIN 53019
- Can measure small sample volumes
- Cylindrical geometry provides defined shear rates
- Compatible with any standard AMETEK Brookfield viscometer/rheometer

# Spindles, Cones, Cups & Chambers

- A range of spindles to meet a variety of needs: CAP spindles, Helipath T-bar spindles, KU-3 spindles, RST spindles
- Cones and cups are used with standard AMETEK Brookfield cone/plate series viscometers and rheometers



# **Vane Spindles**

- 3-piece spindle set for versatile range capability
- Keeps particles in suspension during testing cycle
- Provides information on yield behavior at low rotational speeds
- Follows industry recommendations on length/diameter ratios for vane spindles
- Magnetic spindle coupling option

# In-Line Process Viscometers



## **FAST Viscometer**

Rugged, No-Maintenance In-Line Viscometer

- Unique micro rotational sensor
- No moving parts, no maintenance
- Unaffected by external vibration
- Flexible vertical or horizontal installation
- True temperature readings to 200°c



# **VTE Electric Viscosel**

In-Line Viscometer for Paints and Coatings

- Convenient & inexpensive
- Sensitive response ensures continuous conditioning of fluid
- In-line measurement eliminates time constraints
- Simple to change viscosity range

# Rheometers

AMETEK Brookfield's rheometers allow for quick and easy viscosity and viscoelastic measurements in a wide range of applications.



#### **RSO** Rheometer

Our Latest Full-featured Rheometer

- User-friendly touch screen
- Auto spindle recognition
- Automatic gap setting
- Rapid temperature control



#### **RSX Rheometer**

#### **Next Generation Rheometer**

- Rotational, controlled-stress rheometer mostly used in QC and R&D environments.
- Controlled stress/rate operation to analyze comprehensive flow behavior
- Large 7-inch full color touch screen display
- Cone Plate (CPS), Coaxial Cylinder (CC), and Soft Solids Tester (SST) versions available

#### **Recommended Software:**

• Rheo3000



#### **RST Cone Plate**

#### **Our Most Versatile Rheometer**

- Controlled stress/rate operation
- Auto spindle recognition
- LCD touch screen

#### Recommended Software:

• Rheo3000



# **RST Soft Solids Tester**

Characterizes Yield in Soft Solids

- Controlled stress/rate operation
- BU unit measurement options
- Measures viscoelastic characteristics such as yield stress, shear modulus and creep

#### **Recommended Software:**

Rheo3000



# **RST Coaxial Cylinder**

- Controlled stress/rate operation
- Auto spindle recognition
- Rapid temperature control with peltier option
- LCD touch screen

#### Recommended Software:

• Rheo3000



#### **PVS** Rheometer

#### Ideal for High Temperatures and Pressures

- Highly portable with 1' x 1' x 2' footprint
- Measures samples from vacuum to high pressure up to 1000 psi
- Measures under temperature conditions: -40°C to +260°C

#### Recommended Software:

Rheovision



# **CTX Texture Analyzer**

#### Our Latest Full-Featured Texture Analyzer

- Deflection compensation for the most accurate measurements
- Interchangeable load cells for optimal flexibility
- Easy-to-read display and easy-to-use, intuitive controls
- Extended boom for longer reach testing
- Three adjustable base tables for more versatile sample testing

#### Recommended Software:

Texture Pro



## **TA-DEC**

- Dual extrusion cell
- Used for forward and back extrusion of fruit puree, pudding, yogurt, or similar products



#### TA-STF

- Quantifies the spread force of a material
- Comes with 1 male cone probe, 5 sample cups, and 1 cup holder



## TA-SBA-WB-1

- 1mm shear blades
- Used for cutting-shear test of meat, fish, sausage, and similar products

Texture

Analyzers

AMETEK Brookfield's easy-to-use texture

of materials in a wide variety of industries.

analyzers measure compression and tension

# Accessories

REV. E



#### **TA-52 MOHRS**

- Used for cutting tests
- Perfect to test meat, poultry, fish, or similar products



#### **TA-TPB**

- Three-point bend fixture
- Used to determine the hardness of products such as hard tablets, granola bars, and energy bars



# **TA-CTP**

- Compression top plate
- For applying uniform compression force on samples up to 4x6 inches

# Powder Flow Tester

Powder Flow Testers deliver quick and easy analysis of powder flow behavior for a wide variety of industries and applications.



## PFT

#### Powder Flow Analyzer

- Multiple test options
- Automated analysis
- Compact design

#### Recommended Software:

Powder Flow Pro

## Accessories



## **Vane Lid**

Used for flow function test



## **Friction Lid**

- Wall friction lid
- Used for wall friction test and density test



# **Outer and Inner Catch Trays**

- Reversible scraper tool
- Inner catch tray
- Outer catch tray
- Trough

# Moisture Analyzers

World-class instruments for measuring moisture content from the pioneer in the field.



# Computrac® Vapor Pro® XL

The Next Generation in Chemical-Free Moisture Analysis

- Chemical-free alternative to Karl-Fischer titration
- RH-sensor measures moisture content
- Heater allows for more control over range of testing temperatures
- Detects as few as 10 micrograms of water
- Touchscreen interface reduces operator error



# Computrac® MAX® 5000XL

Moisture, Solids & Ash Analyzer

- Accurate readings for both ash and moisture content from a single sample
- Fast readings in half an hour or less
- One-button operation with no intermediate steps required
- Durable design for heavy duty use



# Computrac® Vapor Pro XL® **Autosampler**

Multi-Sample Automated Chemical-Free Moisture Analyzer

- Automatically measure up to 16 different samples



# Computrac® MAX® 4000XL

Loss-on-Drying Moisture & Solids Analyzer

- Precise, repeatable results
- Durable design for heavy-duty use
- Rapid cooling system
- Allows for a wide range of applications, from food to plastic to paper
- World-class support from moisture analysis experts

# Toxic Gas Analyzers

Detect mercury vapor in air at levels as low as 0.05 µg/m3.

Detect hydrogen sulfide gas in air at levels as low as 3 ppb.



## Jerome® J505

Hand-Held Atomic Fluorescence Spectroscopy Mercury Vapor Analyzer

- Lightweight (6.5 lbs)
- Atomic fluorescence means no regenerations or downtime needed
- Exceeds EPA standards for industrial/residential remediation
- 18 hours of battery life per charge
- No hydrocarbon interferences



# Jerome® J405

#### Gold Film Mercury Vapor Analyzer

- Sensitive detection limits, ideal for industrial and residential cleanup
- Durable design for use in any environment
- 24 hours of battery life per charge
- Features onboard data logging for up to 20K measurements
- USB data transfer & SCADA interface capabilities
- Proven as the gold standard in mercury detection for over 35 years



## Jerome® 451

#### Gold Film Fence-Line Mercury Monitoring System

- Set-and-forget mercury vapor monitoring
- Detachable hand-held mercury vapor analyzer pinpoints gas source
- Smart alarms provide warnings and email notifications
- Wireless measurement data transmission to PCs
- Durable design for any environment



# Jerome® J605

#### Gold Film Hydrogen Sulfide Analyzer

- Detects hydrogen sulfide in the air at extremely low levels
- Durable design for use in any environment
- 18 hours of battery life per charge
- Onboard data logging for up to 20K measurements
- USB data transfer & SCADA interface capabilities
- Gold standard in hydrogen sulfide analysis for over 35 years



# Jerome® 631-X

#### Gold Film Hydrogen Sulfide Analyzer

- Detects hydrogen sulfide in the air at extremely low levels
- Durable design for use in any environment
- 18 hours of battery life per charge
- Onboard data logging for up to 20K measurements
- USB data transfer & SCADA interface capabilities
- Gold standard in hydrogen sulfide analysis for over 35 years



# Jerome® 651

#### Gold Film Fence-Line Hydrogen Sulfide Monitoring System

- Set-and-forget hydrogen sulfide monitoring
- Detachable hand-held hydrogen sulfide analyzer pinpoints gas source
- Smart alarms provide warnings and email notifications
- Wireless measurement data transmission to PCs
- Durable design for use in any environment

# Software

AMETEK Brookfield's software is available to control our instruments and automate data collection.

# RheocalcT - DV2T, DV3T, DVNext

- Wizard guides user through creation of common tests
- Yield testing
- Data averaged by step or whole test
- Math models: Bingham, Casson, Casson NCA/CMA, Power Law, IPC Paste, Herschel-Bulkley, Thix Index
- Includes features for 21 CFR compliance

## Rheo3000 - RST

- Program by controlled stress/rate
- Automate viscosity vs. temperature testing
- Quality control limits for pass/fail tests
- · Automated analysis of collected data
- Calculate yield and average viscosity
- Includes features for 21 CFR compliance

# Rheovision - PVS

- Ability to control multiple PVS units
- Easy calibration and built-in linearity check
- Instantaneous flow curves
- Built-in math modeling
- User-friendly ramp wizard for quick API testing

#### **Texture Pro - CTX**

- Wizard guides user through creation of common tests
- Simplified user interface
- Filters for searching and managing existing data
- Easy export, import, and data deletion
- Compare data by loading up to 20 distinct data sets within the graph
- Includes features for 21 CFR compliance

## **TexturePro CT - CT3**

- Data captured as graph and stored in database format
- Advanced data analysis includes calculations of springiness, chewiness, and hardness
- Evaluates the mean and standard deviation for up to 30 samples

## PG Flash - DV2T & DV3T

- Creates repeatable custom tests
- Extends capabilities with multi-step programs
- Create a program on a PC and upload to the DV2T or DV3T

# Wingather SQ - DV1

- Multiple test modes for enhanced data collection
- Automatic sample numbering
- Math models: Bingham, Casson, Casson NCA/CMA,
   Power Law, IPC Paste, Herschel-Bulkley, and Thix Index
- Data graphing of up to 20 data sets concurrently
- Plot data available: % torque, RPM, viscosity, shear rate, shear stress, temperature, and time
- Export data to spreadsheet format

# Capcalc - CAP2000+

- Automated data collection eliminates operator error
- Easy-to-read instantaneous viscosity flow curves
- Records up to 1000 data points per test
- Math models: Bingham, Casson, NCA/CMA
   Casson, Power Law, Herschel-Bulkley.



## **Powder Flow Pro - PFT**

- Flow function, wall friction, time consolidated flow function, and bulk density tests
- Graphically plot normal and shear stress values
- Display up to 8 different flow function curves



# **Temperature Control**

For elevated temperature testing of hot melts, asphalt, wax, and polymers.



# **Thermosel System**

- Provides control of sample temperature for up to +300°C
- Programmable controller offers single set point or up to 10 programmable set points
- Compatible with standard AMETEK Brookfield Viscometers and DV3T Rheometers
- Disposable spindle/chambers option
- Ideal for asphalt or any other difficult-to-clean material

# **Water Baths**

Water baths allow temperature control during viscosity measurements, ensuring accurate test results.



#### **MX Series**

- Economical
- Large character display
- Single speed pump
- Maximum temperature up to 135°c



#### **SD Series**

- Best value
- Programmable with PC control using RheolcalcT
- 2-Speed pump
- Quick scroll to set temperature to standalone mode



#### **AP Series**

- Touch screen interface
- Standalone programmable
- Variable speed pump
- PC control using RheolcalcT



#### **TC-150**

- Compact
- Built-in circulator pump
- Built-in tap water cooling coil
- For use with water-jacketed devices



#### **TC-250**

- Configured for measuring multiple samples directly in the bath
- Work area accommodates 600 mL and 1000 mL beakers
- Built-in tap water cooling coil
- Built-in circulator pump



#### TC-351

- Eliminates tap water requirements on non-refrigerated baths
- Increases lower range of most baths to -20°C



#### **TC-550**

- Stand-alone operation
- Easy control of set-point
- Configured to measure viscosity directly in the bath accommodates 600 mL beaker
- Programmable controller version is designed to automate sample temperature control
- Built-in circulator pumps to external devices



#### **TC-650**

- Compact—small footprint on your lab bench at only 8-1/4 inches wide
- For use with water-jacketed devices
- Provides stand-alone operation no tap water required
- Easy control of set-point
- Programmable controller version is designed to automate sample temperature control

# **Viscosity Standards**

- Accurate to +/- 1%
- NIST traceable
- Selection of 1-2 sufficient to verify calibration
- Hydrocarbon based mineral oil or polybutenes



#### **CAP Oil Fluids**

Used for Calibrating CAP Series Viscometers

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000 cP



# High-Temperature Silicone Fluids

Used with the AMETEK Brookfield Thermosel Accessory

- High-temperature silicone fluids are newtonian fluids calibrated at 25°C, 93.3°C, and 149°C (77, 200 and 300°F, respectively)
- Excellent temperature stability
- Most economical



# **Special Order Silicone Fluids**

Custom Viscosity or Temperature Ranges of Silicone Fluids

- Excellent temperature stability
- Special viscosity values and temperature calibrations available upon request



## **General Purpose Oil**

Used for Calibrating Cone/Plate Viscometers/Rheometers and Krebs Spindle Geometry Instruments

- Appropriate for use at shear rates greater than 500 sec-1
- Recommended for use with cone/plate viscometers at viscosities above 5,000 cP



# Krebs Viscometer Oil Fluids

Used with the AMETEK Brookfield KU Series Viscometers

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000



#### VisCal Kit

Used to Calibrate all AMETEK
Brookfield Viscometer/Rheometers

- Perfect for first-time viscometer/rheometer buyers
- Everything needed to verify calibration in one conveniently packaged kit



#### **General Purpose Silicone**

Used to Verify AMETEK Brookfield Lab Viscometers/Rheometers' Calibration

- Excellent temperature stability
- Most economical



#### **RST Oil Fluids**

Used with the RST Series Rheometers

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000 cP

# Calibration, Repair Service and Certification

AMETEK Brookfield recommends that you return your instrument to AMETEK Brookfield or an authorized dealer on an annual basis for Calibration and Certification Service. Please contact us for a Return Authorization Number or register on our website.

Loaner instruments are available should you need a temporary replacement while your instrument is being serviced. Contact AMETEK Brookfield or an authorized dealer for additional information.

24-hour and 48-hour rush service is available. Contact us for details.

Onsite Service Calibration and Certification

- Ideal for multiple instrument users
- Minimal production disruption
- Reduced downtime

- No shipping damage or costs
- Expert onsite advice on preventative maintenance

#### IQ, OQ, PQ for AMETEK Brookfield Products

We offer industry-specific documentation for installation and validation of your instruments.

# **Testing and Consulting**

TEST AND RECOMMEND:
MATERIAL SAMPLE TESTING:

Evaluations designed to choose the appropriate AMETEK Brookfield equipment for your application.

Expert analysis testing to determine the material properties of your sample. A detailed report will be provided.

A Detailed Report Will Include:

- Sample preparation method
- Equipment recommendations
- Controlled shear rate and shear stress tests
- Temperature profiling

- Thixotropic testing
- Material structure recovery evaluation
- Data collection and reporting
- QC viscosity control limit values



# **Education and Training**



AMETEK Brookfield University provides material characterization learning opportunities at your convenience and on topics that interest you. Take courses with instructors who are experts and possess combined decades of experience in viscosity, rheology, texture, powder flow, moisture, gas analysis, and more.

The AMETEK Brookfield University training platform offers:

- Online training courses in a number of subject matters
- Live training courses and webinars
- On-demand online training
- Global onsite training at locations near you





# **Technical Support**

To request Technical Support for your AMETEK Brookfield products, please contact technical support in your region. Please provide your detailed contact information and specify your preferred method of contact (phone or e-mail). Also, provide a description of the issue you are having or questions you may have along with a unit serial number or model type (if applicable).

- Application Notes
- Articles and Technical Papers
- Help Me Choose an Instrument
- FAQ
- Product Change Notices

# Contact Us



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#### **USA** - Headquarters

**AMETEK Brookfield** 11 Commerce Blvd. Middleboro, MA 02346 USA

Phone: 1-508-946-6200 Fax: 1-508-946-6262 E-mail (Sales): ma-mid.sales@ametek.com E-mail (Service): ma-mid.ccs@ametek.com



#### **United Kingdom**

AMETEK GB LTD T/A Brookfield Brookfield Technical Centre, 1 Stadium Way Harlow, Essex, CM19 5GX

Phone: +44 (1279) 451774

E-mail (Sales): uk-har.sales@ametek.com E-mail (Service): uk-har.service@ametek.com



#### **USA - Chandler, AZ**

**AMETEK Brookfield** 3375 N. Delaware St. USA - Chandler, AZ, AZ 85225 USA

Phone: 1-602-470-1414 Fax: 1-602-281-1745

E-mail (Sales): ma-mid.sales@ametek.com E-mail (Service): ma-mid.ccs@ametek.com



#### Germany

AMETEK GmbH / BU. Brookfield Oberweyerer Str. 21 65589 Hadamar-Steinbach, Germany

Phone: (+49) 6433-91454900 Service: (+49) 6433-91454901

E-mail (Sales): brookfield.de@ametek.com E-mail (Service): brookfield-service.de@ametek.com





#### India

AMETEK Instruments India Pvt. Ltd. Divyasree NR Enclave, 4th Floor, Block A Plot No. 1, EPIP Industrial Area, Whitefield, Bangalore 560066 Karnataka, India Phone: (91) 11/6618-0800 Fax: (91) 11/6618-0836

E-mail (Sales): brookfield-india.sales@ametek.com E-mail (Service): brookfield-india.service@ametek.com



#### China

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AMETEK Commercial Enterprise (Shanghai) Co. Ltd. 4th Floor Building #4 No. 155 Puhui Road Jiuting, Songjiang, Shanghai, China (201615) Phone: 86-21-37632111 Ext. 8893 E-mail (Sales): brookfield-china.sales@ametek.com E-mail (Service):brookfield-china.service@ametek.com



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#### **Thailand**

AMETEK (Thailand) Co.,Ltd Bhiraj Tower at Bitec, 23rd Floor, Room no 23009, Sukhumvit Road, Bangna, Bangna,

Bangkok 10260 Thailand Phone: +66(0)2 017 5151 Service: +66 (0)2 017 5159 Fax: +66 (0)2 012 7501

Email (Sales): brookfield-thailand.sales@ametek.com Email (Service): brookfield-thailand.service@ametek.com