

Developers and manufacturers of paint test equipment



TQC Sheen designs and produces field measuring instruments and lab equipment for testing paint and coatings and general surface treatment.

#### **Production facility**

TQC Sheen's objective is to create and offer solutions for every possible QC-application in surface technology. TQC Sheen products are known for their ergonomic features and user friendliness. The production facility is located in The Netherlands. In order to complete the TQC Sheen range the company works closely together with renowned manufacturers from all over the world.

#### **Global distribution**

TQC Sheen has offices in the Netherlands, Germany, Italy, United Kingdom, Norway, Korea, China, Singapore and North America, and works closely together with a global network of distributors in more than 60 countries. The TQC Sheen product range focuses mainly on three different market sectors; Paint Research and Development Laboratories and Quality Control, Protective and Marine Coatings Applications, Surface Finishing Industry.

#### **History and innovation**

In October 2017 TQC BV. has acquired Sheen Instruments LTD. Sheen Instruments has a history of over 70 years being manufacturers of laboratory equipment for the paint industry. TQC is a manufacturer of paint test equipment renowned for their innovative approach and ground breaking developments.

Both companies are joining forces now and the two brands are being merged in the new TQC Sheen label. The new name represents the best of both worlds: Innovation & History.

#### **Extensive range**

The new label represents perhaps the most extensive range of paint test equipment varying from a vast range of viscosity meters, automatic film applicators, scrub and scratch testers to gloss & colour meters, thickness gauges, drying time testers etc..



TQC Sheen's production facility is located in The Netherlands



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# **DIGITAL ROTOTHINNER**

The TQC Sheen Digital Rotothinner™ is used for determination of the viscosity in P or cP, as used in the paint, coating and ink industry. It is equipped with a clear display, easy user interface and ensures high reproducible results measurement after measurement.

#### ★ Features

easy to use

highly accurate

manual and automatic operation

four lines digital display with backlight

#### 3 modes

The TQC Sheen Digital Rotothinner™ can be used in 3 modes; Manual: Max-hold and Timed. A superb stable drive system creates a wider measurement range and more accurate readings.

The meter is both highly accurate and simple to use, making it suitable for research as well as production environment.

level adapter set (  $\frac{1}{2}$  pint, 1 pint) included

Calibration certificate included

240V/110V power adapter

# Viscosity

The higher the viscosity of a product the more it will resist to flow. Non Newtonian fluids are time and force dependent.



When the amount of force influences viscosity special equipment, like a Rotothinner or a gel strength tester will be required. In production environ-





# **DIGITAL KREBS VISCOMETER**

Based on the popular traditional KREBS method, using a weight-driven rotating paddle to sense the paint viscosity at a constant 200 rpm, this modern digital instrument provides automated motor operation, without weights & pulley, allowing accurate direct reading in KU (Krebs units), mPa·s (cP) or g (gram).

#### Automatic Conversion

The conversion between these units is automatically calculated by the microprocessor and displayed on request. Sturdy construction allows for use either in a production environment or in the laboratory.

#### ★ Features

Single or continuous reading in KU, mPa·s (cP), gram

Over-range indication

Simple to install rotor spindle into quick release chuck

Easy to clean

Safety height sensor preventing the rotor from rotating above the can

Possibility of multi-point calibration by user with optional key

Memory for 9 readings, RS232 serial interface to printer

Standard package: Viscometer, rotor spindle, 1 pint

(500 ml) / Ø85 mm can, printer cable.

ments where the non-Newtonian properties of a product are not required to be known exactly, flow cups are broadly used. TQC offers flow cups according to or similar to ISO 2431, DIN 53211, ASTM 1200 'Ford', AFNOR. Most of these cups are also available as

dip-type. TQC Sheen also supplies all necessary accessories such as tripods, thermometers, stopwatches and temperature control jackets.





# **GEL STRENGTH TESTER**

This instrument is especially suited to assess the yield strength and consistency of thick paints and other materials such as gels and putties etc.. A 250 ml can containing the sample is magnetically fastened onto a turntable, which is loaded with a calibrated spring displaying an engraved scale of 0-450 gm/

cm. When immersed into the sample, the flat  $4\times 2$  cm paddle spindle rotates automatically at 2 rpm, and drives the whole can & turntable.

After a peak reading followed by a short time of stabilisation, a steady torque value is indicated on the scale. Other paddle sizes are available on request.

#### **★** Features

Electronic constant speed control over the full range

Paddle spindle simple to install with quick release chuck

Easy to clean

Safety height sensor preventing the rotor from rotating above the can

Sturdy construction for use either in lab or production line

Standard package: Viscometer, paddle spindle, 250 ml / Ø85 mm can220-240V - 50 Hz

250 ml / Ø85 mm can.

220-240V - 50 Hz





# **CONE AND PLATE VISCOMETER**

This standard test for dynamic viscosity measurements is now faster and more accurate by use of new high precision microprocessor controls. As non-Newtonian fluids exhibit different viscosities relative to the shear rate applied, the cone and plate viscometer tightly controls it to 10,000S<sup>-1</sup> (B.S. requirements) or to 12,000S<sup>-1</sup> (ASTM). These are generally accepted to be representative of paint application via a roller or brush and so reflect 'real world' application.

# Temperature controlled

As most viscosity measurements are highly temperature sensitive the samples are placed on a temperature controlled plate which can be set from 5 to 65°C (41 - 149 °F). All cone kits are interchangeable for various viscosities.

#### ★ Features

Temperature controlled plate

Quick release chuck for rapid cleaning / replacement

Menu guided LCD display

Hard wearing titanium nitride cone / plate assembly

20 reading memory

RS232 output: parallel or serial, printer or computer

Full Auto zero

Single or continuous reading

Simple calibration procedure





The AFA Compact is an entry level film applicator that accepts charts up to A4 size. Application speed can be set from 1 to 150 mm/s. The Compact is suitable for both wire bar applicators and block applicators. Operating is easy through the standard TQC Sheen operating interface. The AFA Compact is available with a glass bed or a perforated vacuum bed.

#### Triple i function

The TQC Sheen's Automatic Film Applicators are quite simple to operate by means of the menu in the display and the 5-key navigation switch. The 5-key navigation switch is equipped with the unique Triple i function (Intelligent Illumination Interface). Triple i enhances the intuitive operation by illuminating just those keys that are active in combination with the position in the operating menu.

# ★ Features

Traverse speed infinitely adjustable

Supplied with drip pan and paper holder

Triple i Control (Intelligent Illumination Interface)

Traverse speed 1 - 150 mm/s/ 0.03 - 5.90 in/s

Charts up to A4 size

Compatible with a large range of application tools

Very accurate traverse speed < 1%

Safe 24V powered

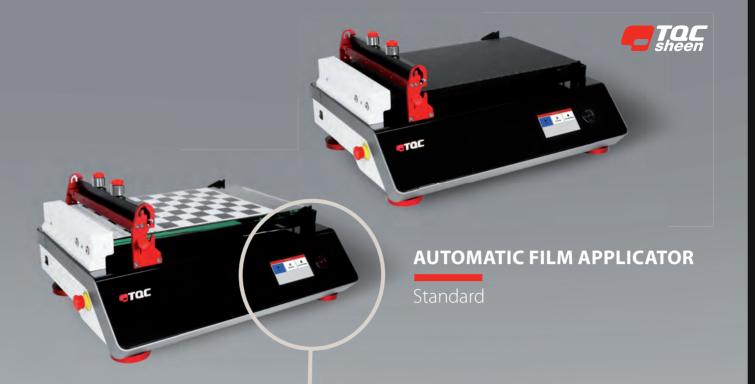
# Several tools are available that give automatic film application with the AFA Standard an extra dimension:

#### Block applicator weigth

Enhances the contact with the surface for a more stable applicator movement this stabilizing the applied

film thickness.





The TQC Sheen AFA Standard provides a reliable basis to apply coating films to test charts, panels or foils in a uniform and reproducible way in order to eliminate variations caused by human factors. Variations in speed, pressure and direction of draw down cause irregularities. Other factors that may influence the result are the shear rate and the weight of the applicator.

#### Research on rheological properties

The quality of the applied film is important for research on rheological properties of the applied media. To prepare samples for testing rheological properties, abrasion resistance, hiding power and gloss the TQC Automatic Film Applicator Standard is a must have.

The TQC Sheen Automatic Film applicator is also available with an electrically heated vacuumbed. The temperature can be set digitally from ambient +5°C to ambient + 100°C. Heat-up time is short and temperature is uniform over the entire bed.

#### Features

Paper Clamp / Vacuum manually operable

Triple i Control (Intelligent Illumination Interface)

Full color display

Charts up to A3 size

Compatible with a large range of application tools

Easy to update software

Preset range option

#### Hardness Pen tool

Enhances the reproducibility of a hardness test performed with



#### **Drying Time Recorder Tool**

Converts the Automatic Film Applicator 'Standard' into a drying time recorder.



#### **Grindometer Tool**

Enhances the reproducibility of a fineness of grind test with a grindometer







# FILMFUGE APPLICATORS

Centrifugal applicators provide perfectly reliable spin-coated samples. Complementary to conventional techniques, this method offers efficiency and flexibility to daily sample preparation process.

Just fix a panel onto the turntable, pour a known volume of coating onto the centre, close the lid and start the unit. The centrifugal force creates a uniform coating. The thickness is

determined by the rotational speed, nature of the product and panel type. Fully progammable operating parameters, ease of use and high safety makes this apparatus a must-have in all laboratories.

To fulfil most sample size requirements, two models are available. One for small  $100 \times 150$  mm  $(3.9 \times 5.9$  inch) panels, and one for larger  $300 \times 300$  mm  $(11.8 \times 11.8$  inch) panels.

## ★ Features

Programmable time: 10s to 150min, in 10s increments

Programmable speed: 250 to 2500 rpm, in 10rpm increments

LCD display with preset speed, remaining time and actual speed

Automatic lock of the lid during operation

Emergency stop button

Removable aluminium turntable and collecting tray eases cleaning

90 – 254V, 50/60Hz





## PNEUMATIC PANEL SPRAYERS

Consistency in coating application is absolutely essential for subsequent evaluation of colour, gloss, opacity and general appearance, also physical properties including thickness, sagging, levelling and adhesion. Evaluation of these properties is particularly important when applying high performance coatings such as metallic, pearlescent paints and special effect coatings.

#### Very consistent

The TQC Sheen panel sprayers remove the variations in consistency that is experienced when using hand held guns, thus offering a means to set optimum, repeatable conditions to achieve consistent results.

#### Customizable

The Panel Sprayers are fully pneumatic and have been developed in association with major coating manufacturers. TQC Sheen offers many options to customise the panel sprayer for your individual requirements.

#### Setting parameters

The sprayers offer the means to set the atomisation, coating build, flash off timing, flow/levelling, film thickness, gun traverse speeds and accelerated drying, these settings are particularly important when defining the characteristics of new formulations.

#### Optimum settings

Once the optimum settings for a product have been achieved they can be easily reproduced for quality control for further sampling, thus enabling identification of any inconsistences in formulation or preparation.



#### Easy to operate controls

All functions and movements are operated by compressed air

Adjustable gun to panel distance, gun travel speed and spray pressure

Adjustable panel lift increments (for achieving optimum over spray of previous pass of the spray gun)

Flash off timer, to enable optimum setting of rest period between each coating

Magnetic panel holders (Vacuum holders for non-metallic panels)

Suitable for use in all spray booths

**Emergency and Reset button** 

Easy access to internal parts/mechanism for simplified service and cleaning

Fitted with integral air filters and regulators









APPLICATORS
TEST CHARTS
APPLICATION TABLES

#### **Applicators**

TQC Sheen applicator types come as Bird, Baker, Wire Bar, Micrometer adjustable, Cube, Sag and Leveling, Quadruplex, Octoplex, etc.. The choice depends on specification or what one is accustomed to. Applicators vary in width, single or multiple gap, clearance in either microns or mils, height adjustable or not, or wired in different sizes. If the applicator is used manually variables in speed and movement can cause an uneven drawdown. In these cases we recommend an automatic film applicator.

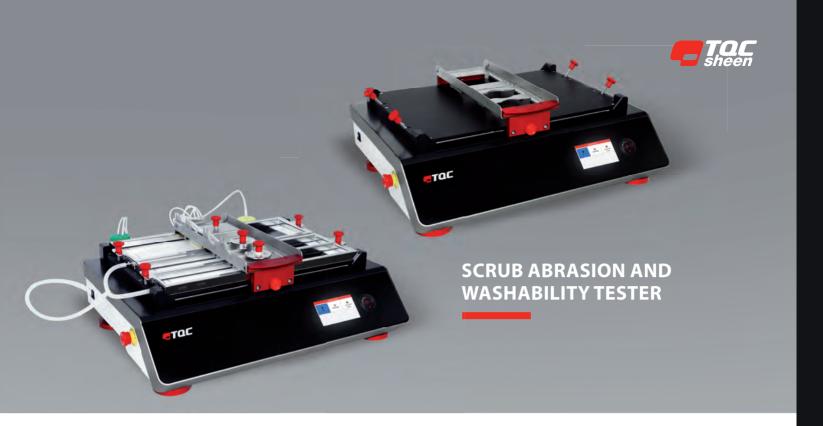
#### Test charts

TQC Sheen offers a wide range of consistent test charts for testing physical properties of coating, lacquers and inks. Suitable for determining hiding power, opacity and spreading rate. Test Charts come in a variety of prints

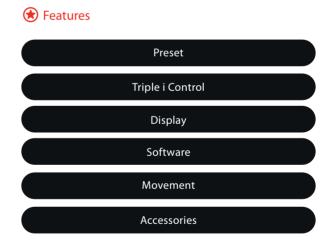
and dimensions from DIN A6 up to and including DIN A4. Also available is a special Washability opacity scrub chart. All charts are film laminated for an excellent solvent and chemical resistance and an even film spread. On each chart there is a section for filling out the date, time and test number. Special designs are possible with quantities over 10.000 pieces per chart.

#### Application tables

When you choose to apply films manually a stable hard surface is needed. This enhances the degree of reproducibility of a drawdown on test charts. TQC Sheen glass application tables are equipped with a strong clamp to hold down the charts and supplied with rubber top cover for use with specific applicators. The glass application tables are available in several sizes.



The TQC Sheen Scrub Abrasion and Washability Tester is used to test the resistence of paint, varnish or coatings to scratching, wearing, and color loss due to wet or dry abrasion, by simulating everyday wear from cleaning actions or general use. The test is either used as a "pass or fail" test by testing to a specified number of strokes or defining the minimum number of strokes at which a coating fails by checking at regular intervals. The TQC Sheen Scrub Abrasion and Washability Tester is suitable for a wide range of scrub, abrasion and washability tests that are in use.



# **Scrub Abrasion Washability Chart**

Especially designed for application on the new TQC Sheen Automatic Film Applicator 'Standard', and for use on the TQC Sheen Scrub, Abrasion, Washability Tester:

TQC Sheen Scrub Abrasion Washability Charts. With black and white print.







# **DRYING TIME RECORDER**

The TQC Sheen Drying Time Recorder is a fully digitally controlled machine to define the different stages in the drying process of paints and coatings. The TQC Drying Time Recorder operates conform the BK (Beck Koller) method. Defining the final result or checking intermediate stages is very easy by means of the clear digital display and the intuitive interface. The compact machine meets ASTM D5895, ISO 9117-4 and DIN EN 14022. The TQC Sheen Drying Time Recorder has six tracks, and comes with two robust and reusable glass beds of 100 X 350 X 3 mm. Optional are six narrow glass beds in special adapters. The front panel of the TQC Sheen Drying Time Recorder is made out of clear glass, which is easy to clean and protects the display underneath. The TQC Sheen Drying Time Recorder is powered by a safe 24 V DC power supply.

The operating range of the TQC Sheen Drying Time Recorder is from -20°C to +70°C .

#### Temperature-friendly Design

The possibility to perform tests at temperatures as low as -20 °C

is unique. The drive system is lubricant free, so there is no risk of lubricants that thicken at lower temperatures. The display is heated which enhances menu visibility at lower temperatures. These design features result in a wide operating temperature range from -20°C to +70°C (non-condensing), which makes it possible to perform tests in climate chambers.

Time indicator - A broad and flexible time range can be set varying from 1 minute up to 200 hours. The TQC Sheen Drying



# Flexible travel times Check intermediate and final results Enhanced menu visibility Lubricant free drive system Triple I operating interface



Time Recorder is suitable for fast drying waterborne coatings as well as very slow drying paints.

#### Broad and flexible time range

A broad and flexible time range can be set varying from 1 minute up to 200 hours. This makes the TQC Sheen Drying Time Recorder suitable for fast drying waterborne coatings as well as very slow drying paints that may need days to dry. Time settings are very accurate, < 1 % of set time.

Very accurate

Glass front panel

Reusable glass beds

Safe 24 V DC power supply

Six tracks

# **Drying time**

A casterguide is NOT required for the TQC Sheen Drying time recorders, which are standard equipped with wide panels which most prefer.

Wide panels are not suitable for a casterguide but paint can easily be applied using TQC Sheen's Triple reservoir applicator. When using narrow panels the TQC Sheen Cube applicators are standard equipped with a guide plate that eliminates the need for a casterguide and simply allow the user to apply straight draw downs on the narrow glass panel. No extra costs, no extra cleaning, no extra tool.







# COMPREHENSIVE ABRASION TESTER

The TQC Sheen Comprehensive Abrasion Tester (CAT) replicates the behaviour of beverage cans during transportation. Failures resulting from scuffing and friction may be very costly for a drinks manufacturer if the result is leaks from a pressurised can wrecking a whole pallet load, or more.

TQC Sheen's CAT is a universal test machine for testing coating quality on beverage cans. Its reciprocating motion of the cans mimics in-the-field transportation damage of drink cans.

Tests can be performed with many different can sizes which can easily be loaded and unloaded.

Parameters such as pneumatic top and side pressure, traverse movement and test length can be programmed with the supplied software. If leakage occurs during test, the liquid is collected in a spill drawer which can be emptied easily. The use of pneumatics guarantees long life, low maintenance, and a high level of accuracy.

# **★** Features

Test abrasion resistance of coatings

Reciprocating motion of beverage cans

Mimics in-the-field transportation damage

Menu-driven operation

High level of accuracy

Spill drawer

Pneumatics guarantee long life and low maintenance





# **AUTOMATIC SCRATCH TESTER**

This motorised apparatus is dedicated to coatings hardness evaluation based on scratching resistance method. A test panel is clamped and slowly moved whilst a stylus or alternative tool scratches the surface. Depending on test procedures, specified or variable loads can be applied to obtain different degrees of failure, from trace to destruction. A voltmeter indicates the contact of the tool with the metallic sample substrate.

The maximum panel size is 100x150x1.6 mm with 0.3x5.9x0.006 inch with 0.01inch coating.

## ★ Features

Robust construction, reliable and reproducible results

Simple maintenance, easy to replace tools

220-240V / 50Hz (110-120V / 60Hz on request, please specify)

# **Hardness**

The hardness of the coatings is generally understood as the impression value at which a deformation of the coating occurs. This is determined by pressing a sharp or blunt stylus, depending on the material or coating, into the surface. Another method to measure hardness is the determination of rolling resistance of a coated surface.

# Available TQC Sheen Hardness tests:

- Pendulum hardness test
- · Impact tester
- Buchholz hardness indentation test
- Manual scratch hardness pen
- Pencil hardness test according Wolff Wilborn
- Durometer Shore hardness test







The CureView Gradient Oven is a flexible oven that allows the user to heat up test panels on a glass bed to a variety of temperature profiles, varying from ambient +5°C to 350°C/ ambient +41°F to 662°F. Elevated temperatures are instantly generated by 32 spectral filtered IR halogen heaters, which can be controlled individually and allow the setting of any form of

**★** Features

Start/Stop operation	
Buzzer	
Safety	
Software	
Automated Transport	
Cooling	
32 IR Heaters	
Data Import	
Visibility	

temperature gradient, varying from a parabolic shaped gradient, an ascending or descending slope or a number of temperature blocks. The CureView Gradient Oven allows importing of gradient profiles, measured by the TQC CurveX oven logger system in order to simulate the production process on laboratory scale.

# CurveX oven tracking system



The CurveX system offers easy to use, high quality temperature data logging for paint curing ovens.

A wide range of loggers and related accessories are available: Basic, standard and special can coater loggers, surface, air and universal temperature probes for different temperature ranges, insulation boxes (also silicon free models and high temperature models), heat sinks etc.

TQC Sheen's Ideal Finish Analysis Software offers user friendly reporting of standard production



work as well as advanced calculations for in depth analysis.



#### **Ultrasonic Wall Thickness Gauges**

Ultraschallwanddickenmessgeräte

Spessimetri ad Ultrasuoni per Materiali

Ultrasone Wanddiktemeters

Ultralyd Vegg Tykkelsesmåler



Druk pyknometer

Trykk pyknometer



#### Grindometers

Grindometer Grindometri Grindometers Grindometer



#### **Pyknometers**

Pvknometer Picnometri

Pyknometers

Pyknometer



#### **Karsten Tube Penetration Test**

Karsten-Rohr Penetrationstest

Test di penetrazione con tubo Karsten

Karsten-buis indring-test

Karsten tube penetration test



#### Glossmeter Sologloss, Duogloss, Polygloss

Glanzmessgerät Glossmetro Glansmeter Glansmåler



#### RAL Charts

RAL Farbkarten RAL Cartella colori RAL kleurkaarten RAL fargekart



#### Conical **Bend Test**

Konischer Dornbiegeprüfer Mandrino conico Konische buigtest Konisk bøyningstest



#### Cupping **Testers**

Tiefungsprüfgeräte Prove di inbutitura Deukproef cupping testers

Cuppingtester



#### **Impact Testers**

Kugelschlag-Prüfgeräte Prove d'impatto a caduta Valproef impacttesters Dropptester



#### Illuminated **Assessment Cabinets**

Farbabmusterungskahinen

Cabine luci

Lichtkabinetten voor visuele inspectie

Lysskap



#### **Wet Film Thickness Combs**

TQC Nassfilmkämme Spessimetri a pettine Natte laagdiktemeters -

Våtfilmmåler



#### **Cross-cut Adhesion Testers**

Gitterschnitt-Adhäsionstester Prove di quadrettatura Ruitjesproef adhesietesters Gittersnitt vedheftstester



#### **Low Voltage Pinhole Detector**

Niederspannungsporenprüfgerät Porosimetro a bassa tensione Laagspanning pinhole detector Lavspent poresøker



## **PowderTAG Thickness Analysing Gauge**

Pulverschichtdickenmessgerät Misuratore di spessore su vernici in polvere PowderTAG laagdiktemeter

Pulver beleggtykkelsesmåler





Molenbaan 19 2908 LL, Capelle aan den IJssel The Netherlands

+31 (0) 10 - 7900 100

(a) +31 (0) 10 – 7900 129

(a) info@tqc.eu

www.tqcsheen.com

#### **TQC Sheen GmbH**

Nikolaus-Otto-Strasse 2 Hilden, D-40721 Germany

+49 (0)2103-25326-0

+49 (0)2103-25326-29

info.de@tqc.eu

www.tqcsheen.com

#### **TQC Sheen-USA Inc.**

3689 Hadley Road Metamora, MI 48455 USA

+1 810 797 8300

@ joel@tqc-usa.com

www.tqc-usa.com

#### TQC Sheen ITALIA s.r.l.

Via Cesare Cantu',26 SEREGNO, (MB) 20831 Italy

+39 0362-1822230

+39 0362-1822234

info@tqcitaly.it

(B) www.tqcsheen.com

#### **TQC Sheen Norge AS**

Øvre Langgt. 26 Tønsberg, 3110 Norway

+47 333 10220

(a) info@tqc.no

www.tqcsheen.com

#### **TQC Sheen Korea**

Bldg Star Plaza, #805 Kimpo-Hangang-8-Ro 410 10071 Kimpo-Si, Gyeonggi-Do South-Korea

+82 (0) 31 982 7074

+82 (0) 31 997 0827

jongsun@tqc.kr

www.tqcsheen.com

#### **TQC Sheen UK**

Po Box 977A Surbiton, KT1 9XL England

+44 208 255 0143

**a** -

janet@tqc.eu

www.tqcsheen.com

#### **TQC Sheen-Singapore**

Tang TH | 陳德雄 Sales & Service Manager APAC

+65 8181 8607

+31 (0)10 7900129

(a) teckhiong.tang@tqc.eu

( www.tqcsheen.com