

## Positector 6000- Coating Thickness Gauge



Coating thickness is an important variable that plays a role in product quality, process control, and cost control. Measurement of film thickness can be done with many different instruments. Understanding the equipment that is available for film thickness measurement and how to use it is useful to every coating operation.

The issues that determine what method is best for a given coating measurement include the type of coating, the substrate material, the thickness range of the coating, the size and shape of the part.

The PosiTensor 6000 offers users the best technology in the world with which to measure coating thicknesses on metallic substrates. There are a multitude of options with regards to probe specification, data treatment and complimentary technologies.

### Theory

Two predominant technologies are used for coating thickness measurements on metal substrates. The choice of technology depends on the nature of the substrate ferrous or non-ferrous

#### Magnetic Induction

Used for ferrous substrates; magnetic induction instruments use a permanent magnet as the source of the magnetic field. A Hall effect generator or magnetoresistor is used to sense the magnetic flux density at a pole of the magnet.

Electromagnetic induction instruments use an alternating magnetic field. A soft, ferromagnetic rod wound with a coil of

fine wire is used to produce a magnetic field. A second coil of wire is used to detect changes in magnetic flux.

These electronic instruments measure the change in magnetic flux density at the surface of a magnetic probe as it nears a steel surface. The magnitude of the flux density at the probe surface is directly related to the distance from the steel substrate. By measuring flux density, the coating thickness can be determined.

#### Eddy Current

Eddy current techniques are used to non-destructively measure the thickness of nonconductive coatings on nonferrous metal substrates. A coil of fine wire conducting a high frequency alternating current (above 1 MHz) is used to set up an alternating magnetic field at the surface of the instrument's probe. When the probe is brought near a conductive surface, the alternating magnetic field will set up eddy currents on the surface. The substrate characteristics and the distance of the probe from the substrate (the coating thickness) affect the magnitude of the eddy currents. The eddy currents create their own opposing electromagnetic field that can be sensed by the exciting coil or by a second, adjacent coil.

### How to select your gauge

#### Choose your substrate:

- Ferrous (steel or iron)
- Non Ferrous (copper, aluminium, etc)
- Ferrous and Non-Ferrous (gauge automatically detects substrate)

#### Choose your probe/body type:





**Perth**  
West Perth  
0408 034 668

**Brisbane**  
Toowong  
0419 477 715

**Melbourne**  
Niddrie  
0428 315 502

**Sydney**  
Belrose  
0418 381 709

[www.pcte.com.au](http://www.pcte.com.au)

**Choose your probe specifications:**

PosiTector® 6000 Series ORDERING GUIDE		Our most popular Removable Built-In and Regular Separate probe models				Ideal for anodized aluminum	Microprobes – Our smallest probes for small parts or hard-to-reach areas			Removable Built-In and Separate probes for thick protective coatings; epoxy, rubber, Intumescent fireproofing and more					
FERROUS PROBES	Standard	F1	FS1	FXS1*	FRS1		POS1	F45S1	F90S1	FT1	FTS1	RKS1*	FKS1	FLS1	
	Advanced	F3	FS3	FXS3*	FRS3		POS3	F45S3	F90S3	FT3	FTS3	RKS3*	FKS3	FLS3	
NON-FERROUS PROBES	Standard	N1	NS1		NRS1	NAS1	NOS1	N45S1	N90S1				NKS1		
	Advanced	N3	NS3		NRS3	NAS3	NOS3	N45S3	N90S3				NKS3		
COMBINATION PROBES	Standard	FN1	FNS1		FNRS1						RNTS1				FNGS1**
	Advanced	FN3	FNS3		FNRS3						RNTS3				FNGS3**
Range		0–60mils 0–1500µm				Ferrous: 0–45mils and 0–1150µm Non-Ferrous: 0–25mils and 0–625µm			0–250mils 0–6mm		0–400mils 0–10,000µm	0–500mils 0–13mm	0–1.5Inches 0–38mm	0–2.5Inches 0–63.5mm	
Accuracy†		±(0.05mil+1%) 0–2mils ±(0.1mil+1%) >2mils ±(1µm+1%) 0–50µm ±(2µm+1%) >50µm				±(0.02mil+1%) 0–4mils ±(0.1mil+3%) >4mils ±(0.5µm+1%) 0–100µm ±(2µm+3%) >100µm			±(0.5mil+1%) 0–100mils ±(0.5mil+3%) >100mils ±(0.01mm+1%) 0–2.5mm ±(0.01mm+3%) >2.5mm		±(0.1mil+3%) ±(2µm+3%)	±(1mil+3%) ±(0.02mm+3%)	±(0.01in.+3%) ±(0.2mm+3%)		
Matching DeFelsko Calibration Standards		STDS1 STDA1				STDS2 STDA2			STDP1		STDP7	STDP5	STDP8	STDP8 (included)	

**Choose your required features, i.e. Standard or Advanced**

**Standard gauge features**

Includes ALL features as shown on below plus...

- Colour LCD display with transfective technology enhances sunlight readability
- Storage of 250 readings—stored readings can be viewed or downloaded

**Simple**

- Ready to measure- no calibration adjustment required for most applications
- On hand menu navigation
- Flashing display - ideal in noisy environment
- RESET feature instantly restores factory settings

**Durable**

- Solvent, acid, oil, water and dust resistant-meets or exceeds IP5X
- Wear resistant probe tip
- Scratch/solvent resistant display suitable for harsh environments
- Shock-absorbing, protective rubber holster with belt clip
- Two-year warranty

**Accurate**

- Calibration Certificate showing traceability to NIST or PTB included
- Built in temperature compensation ensures measurement accuracy
- Hi-Res mode increases display resolution for use on applications that require greater precision
- Conforms to national and international standard including ISO and ASTM

**Versatile**

- PosiTector body universally accepts all PosiTector 6000, 200, RTR, SPG, DPM and UTG probes easily converting from a coating thickness gage to a surface profile gage, dew point meter or ultrasonic wall thickness gauge
- Multiple calibration adjustment options including 1 point, 2 point, known thickness, average zero
- Selectable display languages
- Hi Contrast backlit display for bright or dark environments
- Flip Display enables right-side-up viewing
- Extended cables available (up to 75 m) for remote measuring
- Uses alkaline or rechargeable batteries (built-in charger)



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## Rugged Features...

Sealed USB Port  
for communicating  
with a PC or Mac

Water and dust  
resistant



Hi resolution color LCD

Scratch/solvent/impact  
resistant lens

Multi-function  
navigation button

Solvent, acid, oil  
resistant, high grade,  
industrial strength  
housing

**Advanced  
Model shown  
in Memory Mode**

Quality high-flex  
cable and strain relief

Stainless steel probe  
with knurled finger grip

Strong wear-resistant  
ruby-tipped probe

All Regular Separate Probes  
are suitable for underwater use



- *PosiSoft* USB Drive—stored readings and graphs can be accessed using universal PC/Mac web browsers or file explorers. No software required
- Every stored measurement is date and time stamped
- Software updates via internet keep your gage current
- Connects to *PosiSoft.net*

## Additional features on Advanced gauge models

- Hi Contrast reversible colour LCD
- Storage of 100,000 readings in up to 1,000 batches and sub-batches
- Onscreen help, real time graphing, picture prompting and more
- Batch annotation—add notes and change batch names with onscreen
- QWERTY keyboard
- Wi-Fi technology wirelessly synchronizes with *PosiSoft.net*, downloads software updates and connects with mobile devices for expanded functionality
- Data transfer via USB to a PC or via Wireless Technology to a PC or printer
- Scan mode—take continuous readings without lifting the probe
- Multiple stored calibration adjustments for measuring on a variety of substrate conditions
- SSPC-PA2 feature determines if film thickness over a large area conforms to user-specified min/max levels
- PSPC 90/10 feature determines if a coating system complies with an IMO performance standard for protective coatings



## Powerful

- Continually displays/updates average, standard deviation, min/max thickness and number of readings while measuring
- Screen Capture—save screen images for record keeping and review
- Hi-Lo alarm audibly and visibly alerts when measurements exceed user-specified limits
- FAST mode—faster measurement speed for quick inspection
- USB port for fast, simple connection to a PC and to supply continuous power. USB cable included

## PosiSoft Data Solution:

### USB Drive

Connect your gauge to most computers with the supplied USB cables to access and print stored readings. No software required.

### *PosiSoft.net*

This is a web based application offering centralised management of PosiTensor data. Access your data anywhere.

### *PosiSoft Software*

Newly updated software for your desktop. Available as a free download.

**Papworths Construction Testing Equipment- Australia's leading Supplier of NDT Equipment to the Construction Industry**



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### PosiSoft Mobile

Access readings, graphs, capture photos and update annotations using Wi-Fi enabled devices. (Advanced Models Only)

### Other Probes Compatible with Body

The *PosiTector* Gauge body is compatible with a full array of other *PosiTector* Probes. The same body can be used with all of the following gauges. From Surface Profile Gauges to Ultrasonic Thickness Gauges and more.



### Systems Includes:

All gauges come complete with:

- Precision Plastic Shim(s)
- Rubber Holster and Belt Clip
- 3 x AAA Batteries
- Instructions
- Wrist Strap (built in style only)
- Nylon carry case with shoulder strap
- Calibration Certificate (Traceable to NIST or PTB)
- 2-year Warranty

All *PosiTector* gauges include:

- *PosiSoft* Software
- USB Cable



### PosiTector SmartLink

- Wirelessly connect *PosiTector* 6000 probes to your smart device
- Turns your mobile phone or tablet into a virtual *PosiTector* gauge



### About PCTE

PCTE have over 30 years' experience in the measurement and testing of construction material. With experience in research, consulting and construction they are able to assist you in reviewing the issues and developing solutions. PCTE can provide more than just the equipment. They can provide leading technical support for your business.

### Other Equipment

The PCTE has the most comprehensive range of testing equipment for construction materials in Australia. In addition to the DeFelsko range of coating testing equipment, we also have equipment for NDT of concrete structures, lab testing equipment (for concrete, cement, soil, aggregate, rock and asphalt) as well as monitoring instrumentation for structure, and Geotech.



Contact PCTE today to hear about the  
Inspection Kits we can put together for you

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