

# DEC SCANNER

## ROOF MOISTURE DETECTOR

### FOR NON DESTRUCTIVE EVALUATION OF FLAT ROOFS

#### THE DEC SCANNER IS IDEAL FOR:

- Non destructive moisture testing and surveying.
- Leak tracing and problem sourcing.
- Preventative maintenance programming and planning.
- Warranty auditing and quality control.
- Monitoring re-roofing and repair work.



- Easy and safe to use.
- Switchable ranges of sensitivity to suit most roof construction and surfacing.
- Instant and continuous readings on clear view analog dial with audio warnings on areas of high moisture.
- No regulatory restrictions or operating license required.
- Much faster and user friendly than nuclear method.
- A fraction of the cost of infrared to buy, operate and maintain.
- Free from anomalies associated with other methods.
- May be used in daytime hours.

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Roofing systems consist of decking covered with a layer or more of insulation which, in turn, is covered with a layer of waterproof membrane. The longevity and insulating properties of the roof are dependent on keeping the insulation dry. Therefore it is essential to regularly examine the roof for mechanical damage, weathering, ingress of water, etc. The Dec Scanner has been designed specifically to detect leaks and determine if moisture penetration has taken place.

## Uses harmless electronic field

The presence of moisture in roof insulation causes a dramatic increase in its electrical conductance. The Dec Scanner has been designed to sense this change, through layers of non conductive membrane.



The Dec Scanner is powered by 2 economical D-cell batteries

The Dec Scanner uses two 1.5 volt batteries to generate a low energy electronic field. As the Dec Scanner is moved over the surface of a roof, the flexible electrodes on its base monitor the roof's electrical properties and any change is immediately indicated on the meter. The process is completely safe and non destructive, and there is no need to obtain a license to operate this instrument.

## Easy to use

You simply wheel the Dec Scanner across the roof, taking continuous readings as it moves along. You can do a fast inspection of suspected trouble areas, or a

methodical survey along a planned route. When moisture is encountered, an immediate reading is indicated on the meter and simultaneously, an audible tone is sounded. The rate of audible beeps increases to correspond with any increase in meter activity, so you don't have to look at the instrument all the time.

The Dec Scanner gives you instantaneous indications whenever moisture is present in the felts, insulation, and in many cases when there is condensation. Because the Dec Scanner takes continuous readings, there is no need to stop at grid intersections, as with other systems, so you can work quickly. (Typically, a full survey takes less than half the time required by other on-the-roof devices).

## Fewer false readings

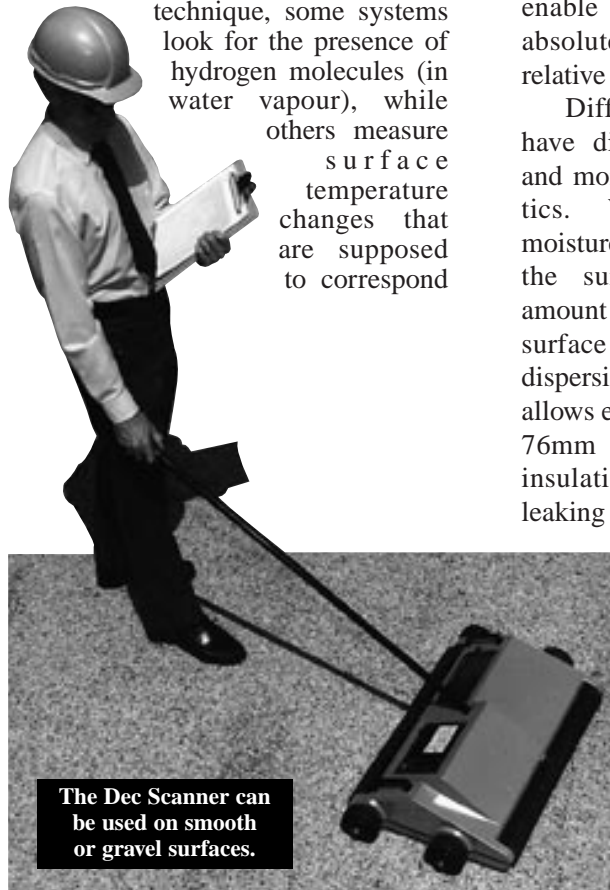
Unlike the Dec Scanner unique electronic measurement technique, some systems look for the presence of hydrogen molecules (in water vapour), while others measure surface temperature changes that are supposed to correspond

with moisture content. Hydrogen detectors can actually misinterpret thicker layers of asphalt as water, and they cannot accurately test thinner roofs due to low readings and/or an insufficient spread of readings. Temperature sensing device data can be falsely influenced by temperature changes caused by vents, wind, structural membranes, the number of felts or asphalt thickness. The Dec Scanner is free of these anomalies and is also the most sensitive device so it can accurately detect the presence of trace amounts of water.

## Higher sensitivity, greater accuracy and excellent penetration.

The Dec Scanner indicates the relative moisture content of the roof. To determine absolute moisture content, core samples may then be taken. Before long, experience will enable the operator to estimate absolute moisture content from relative readings.

Different insulation materials have different dielectric constants and moisture absorption characteristics. With porous insulation, moisture generally penetrates from the surface down; the greatest amount of water is found near the surface travelling along felts and dispersing into the insulation. This allows easy detection up to a depth of 76mm (3"). With closed cell insulation, such as polyurethane, leaking water concentrates between layers, where it can be detected down to approximately 50mm (2"). When testing a surface covered with gravel, the Dec Scanner will detect moisture beneath the surface provided there is no ponded water and the gravel is dry.



The Dec Scanner can be used on smooth or gravel surfaces.

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## A choice of sensitivity scales

The Dec Scanner is equipped with 3 sensitivity ranges to accommodate virtually all roof surfaces and conditions.

**SCALE 1:** Used over a smooth surface where areas of insulation are saturated and where most of the moisture is close to the surface.

**SCALE 2:** Used over a smooth or gravel surface where insulation may be less saturated and where water has only partially penetrated the insulation.

**SCALE 3:** The most sensitive scale, this is used over gravel surfaces to detect very small quantities of water near the surface, or heavier concentrations up to a depth of 76mm (3").

## Makes leak tracing fast and simple

With the Dec Scanner, you can easily trace the boundaries of moist areas to within a few inches. In most cases you'll be able to readily identify the cause of the leak and point of entry. Because of its speed and accuracy, minor repairs can be made on the spot without a second site visit.

## An aid for architects, contractors and building owners.

For architects and roofing contractors the Dec Scanner will be a help in certifying that insulation is dry on completion of a project. This also provides a point of reference for future measurements so that roof condition can be monitored on an ongoing basis and preventative maintenance can be performed before significant damage occurs. Similarly, when contemplating the extent of repairs required on a problem roof, the Dec Scanner will readily prove the condition of the existing insulation. You can then make a sound decision as to whether to strip or to overlay, or perhaps do part of each. With old or new roofs, condensation can be monitored by annual checks and any troublesome areas can be isolated and treated.



*Weighing only 18 pounds the Dec Scanner can be easily carried up a ladder*

## The best surprise... ... no surprise at all

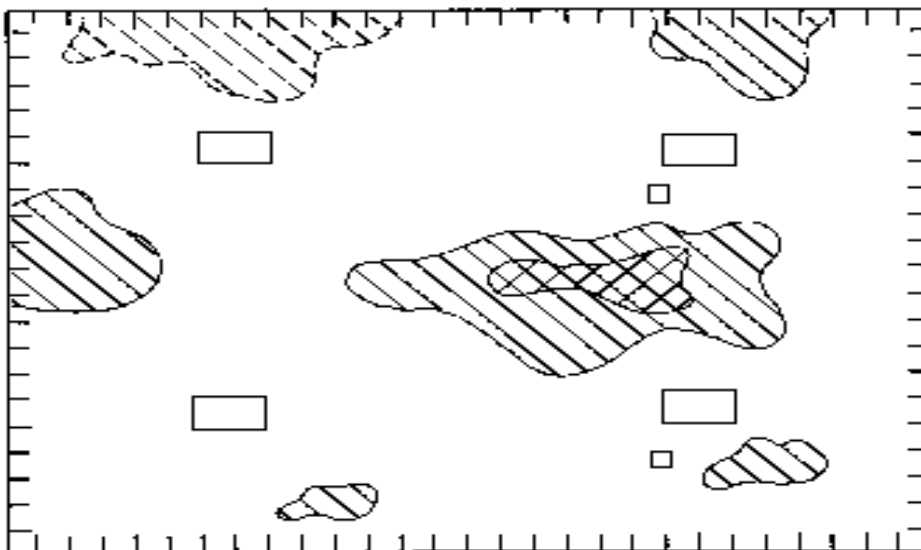
The Dec Scanner is a completely non-hazardous, lightweight, portable instrument. It is reliable, easy to use and yields good information. Additional advantages of the Dec Scanner include its affordability, low operating costs, and the high speed with which large areas can be completely and accurately surveyed with continuous and instant readouts.

## A typical roof survey

The purpose of the test is to determine whether the insulation is wet or dry and the extent of the moisture damage. If wet, the source of the leaks may be easily located and repairs made.

To measure for moisture presence in a roof, you decide how much of the surface you want to inspect. Normally you'll survey at intervals of five to ten feet, which should locate all problem areas. By inspecting the roof in a continuous pattern and marking a corresponding survey sheet, moisture readouts can be permanently documented.

- (1) Mark off the roof perimeter in regular increments.
- (2) Test the Dec Scanner battery condition by turning the unit on.
- (3) Switch to calibrate, select range and zero the Dec Scanner.
- (4) Proceed with the test by rolling the Dec Scanner across the roof and watching its meter and/or listening to the audio tone from its built-in speaker.
- (5) Problem areas can be marked on a survey sheet and/or spray painted directly on the roof.
- (6) If moisture is the result of condensation from within, decisions can be made whether to install vents before blistering or splitting occurs.

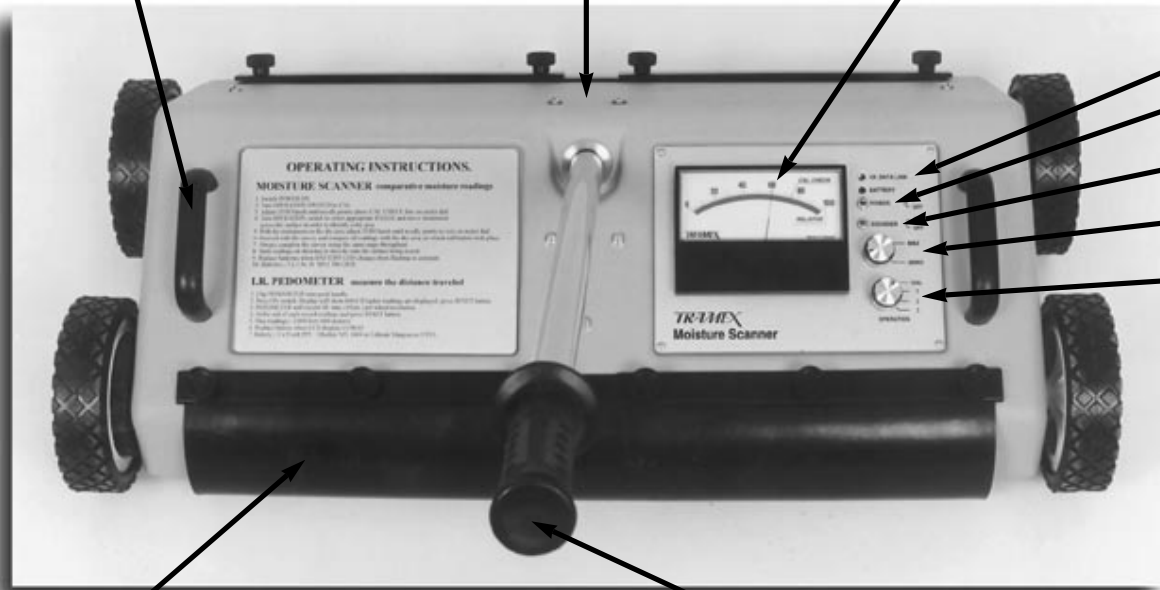


# DEC SCANNER

Side grab handles enable Dec Scanner to be used on sloping and vertical surfaces

Battery Box contains two 1.5 volt D-cell batteries

Large Meter & Scale for easy reading



I.R. Link  
On/Off Switch  
Audio Switch  
Zero Control  
Cal & Range Switch

Conductive rubber electrode pads ensure close contact to roof covering

Two piece removable handle

## TECHNICAL DATA

### CONSTRUCTION:

Strong ABS body on aluminium frame to give light weight yet extra strength and durability.

### WHEELS:

6" (150mm) treaded for ease of movement over all surfaces.

### POWER SUPPLY:

Utilises two 1.5 'D' cell batteries.

### DIMENSIONS:

30"W X 17"D X 8"H (760mm X 440mm X 200mm)

### WEIGHT:

Dec Scanner: 20 pounds (9kg).

With carrying case: 31 pounds (14kg).

### ACCESSORIES:

Comes complete with batteries, carrying case, shoulder strap, survey pad and instructions.

### PEDOMETER:

Optional extra with IR Link to record distance travelled.

## DESIGNED FOR THE ROOFING INDUSTRY

The Dec Scanner is designed and manufactured have been producing a range of moisture meters and detection instruments since 1980.

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