



# Internally Illuminated Pavement Markers

NZTA M29 N: 2013

Presented by James Smith



## The M29 specification

### The key points

The m29 spec relates to internally illuminated pavement markers

These are fitted with LEDs (light emitting diodes)

They need to be lit continuously or controlled by light level sensors.

Powered either by solar, low voltage cables or inductively

Solar powered markers shall also have retro reflective properties.

Photometric requirements:

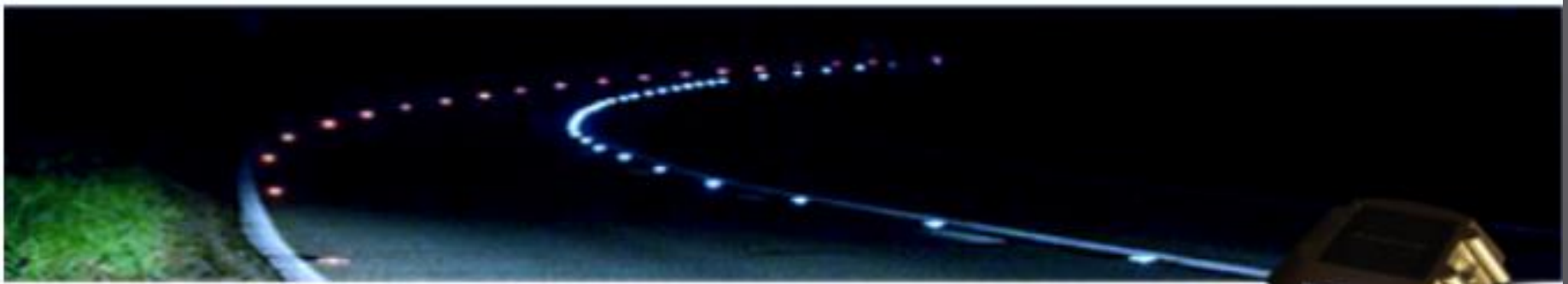
Basically two different ratings, one for day light and one for night.

Range from 0.3cd to 20cd

Markers should operate in temperature ranges for -20 to 65deg C

Warranty needs to be two years from supply date to the installer.

Battery life and expectancy



## Some of the different Markers in Market



### Benedrive - LED Road Markers

Size: Dia.89mmX 65mm  
 12V DC power  
 Safe & easy to repair  
 Embedded design,  
 Snow plough-able.  
 Water proof, IP68



### Pateye - Solar Road Stud

Face Type Toughened glass  
 Construction Metal  
 Body Colour Silver  
 Voltage - Solar3V  
 Solar Panel Life 20 years  
 Battery Life 5 years  
 IP rating - IP67



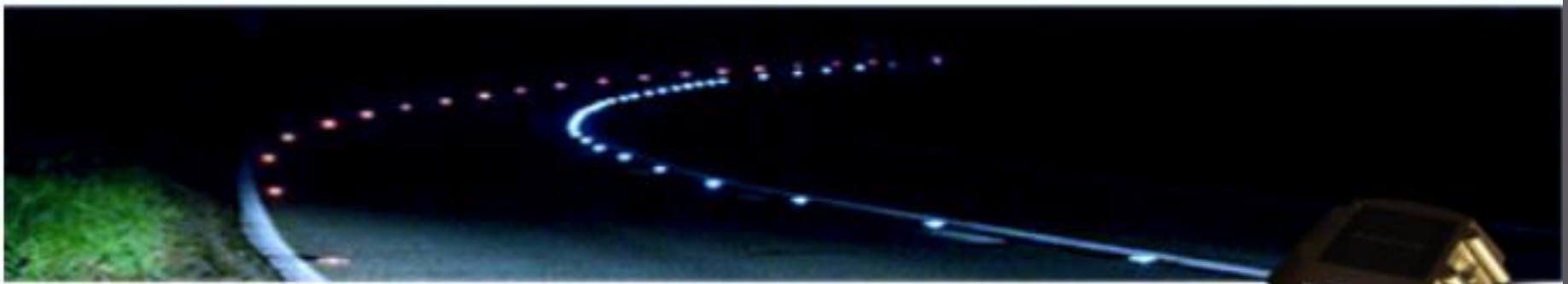
### Astucia Traffic Safety Systems -

Up to 900m of visibility  
 Reliable all night, all year round performance  
 Ideally suited to centre line and slip road use  
 Low profile of less than 4mm above the road surface

### Geveko ITS - "Plug-and-play"

No external energy supply  
 Simple mounting  
 Snow plough safe  
 A self-charging LED system, which saves energy and protects the environment.  
 Can light up to 4000 hours without charging





## Some of the different Markers in Market

### Britesite - Solar Powered Rechargeable LED Marker

LED - Non flashing led

Plastic marker - 3 mm x 5 mm diameter per side

Luminous Intensity - 3000 --- 6000 mcd

Battery - Ni Cd 3.7V, 65 mA

Operating time - 72 hours (after eight hours exposure to strong sunlight )



### 3i - LED Road Markers

Inductively powered.

Robust construction

Individually controllable

Water proof, IP68



# Are they a nice to have or a need to have?



Tunnels  
Ice warning  
Traffic signal backup  
Roundabouts  
Car parks

Pedestrian Crossings  
Dangerous curves  
Industrial site safety  
Delineation  
Intersections





## CURRENT WORLD CHAMPIONS

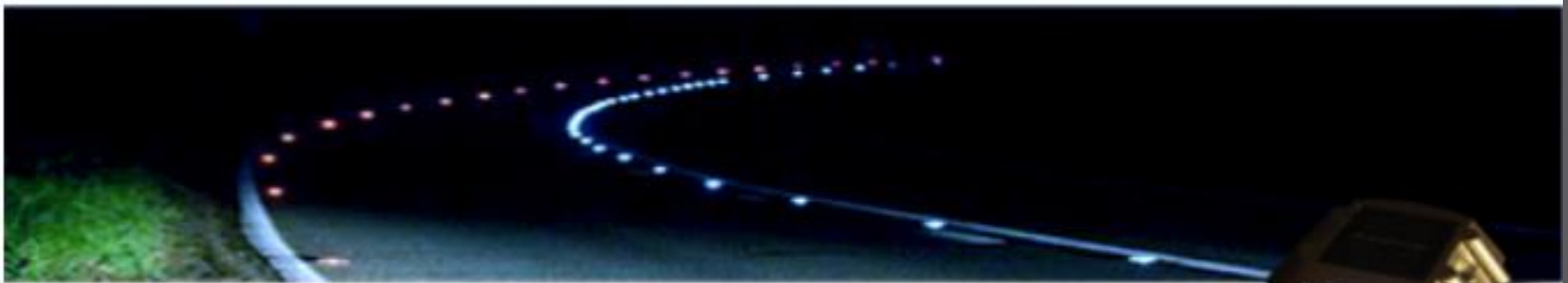
Details	Played	Won by Australia	Won by New Zealand	Drawn
In Australia		24		5
In New Zealand			51	1
Neutral venue	4	2	2	0
Overall	147			6



## The HISTORY of RUGBY UNION MATCHES

AUSTRALIA  
v's  
NEW ZEALAND





## So what is the Future for Illuminated Studs?

- The market continues to grow, with health and safety becoming more of a factor. (large sites) Fletchers
- Traffic flow and efficiency. (Fonterra) example
- European and American countries specifying their use in tunnels.
- Low cost deployment for solar.
- Battery life improvement.
- Led technology improving in both light output and efficiency.
- Product and installation costs. Solar vs inductive.
  
- Where should they be used solar vs inductive / wired.

**“Okay, You have the Bledisloe”**

**We’ve had it long enough**

**yeah right.**



Thank you for your time.