



ZEROCIVIL

ZC-APP-001

APPROVALS AND INDUSTRY RECOGNITION



-
- **Approvals & Industry Acceptance**
 - **Awards & Industry Recognition**

Why Engineers Specify ZERO CIVIL products

- 20+ years in service
- Independently tested
- Accepted by multiple road authorities
- WorkSafe Award
- Innovation Award
- Used by utilities, councils and contractors

20+ Years Proven in Service

- 20 years in service
- no footing damage observed
- alignment maintained

Organisation

Main Roads WA

Western Power

Department of Transport WA

Ventia

Rio Tinto

City of Perth

City of Fremantle

Westfield

City of Stirling

Application

Removable sign posts & Traffic Bollards

Electrical asset protection

Rail station bollards

Coastal infrastructure

Mining infrastructure

Impact Recovery Bollards

Impact Recovery Bollards

Bollard Covers

Streetscape infrastructure

This Document provides evidence of market acceptance and approvals for the ZERO WASTE Foundations and Impact Recovery System. For further documentation and videos scan code on front cover.

PRODUCT FAMILY

1. ZERO WASTE™ Foundations

Reusable ground socket system designed to protect concrete footings while enabling rapid installation, replacement and asset reuse.

2. Advanced Polymer Bollards

UV-stabilised, non-conductive polyethylene bollards engineered for long service life, corrosion resistance and low maintenance.

3. Impact Recovery System™

Engineered Impact Recovery System that enables the bollard to deflect under impact while protecting surrounding pavements and concrete footings.



PROTECT
Infrastructure



REDUCE
Waste



SAVE
Time & Cost



SUSTAIN
the Future

State Road Authorities

ZERO WASTE Foundations has been approved for use by Australian State Road Authorities:

- RTA NSW
- Vic Roads
- Queensland Main Roads
- WA Main Roads
- SA Transport Authority

Functional requirements included

The use of this device is permitted, subject to:

- The device supporting a post in a stable vertical position under service conditions,
- Presenting no additional hazard beyond that inherent with the use of 50 Nominal Bore (60.O.D.) steel posts,
- Preventing the unauthorized removal of posts,
- Facilitating the removal and replacement of posts following damage or when otherwise required.
- The device requiring specialized tools for signpost removal, and
- The device being used strictly in accordance with the manufacturer's instructions.

NSW

Functional requirements include:

- The use of this device is permitted, subject to:
- The device supporting a post in a stable vertical position under service conditions,
- Presenting no additional hazard beyond that inherent with the use of 50 Nominal Bore (60.O.D.) steel posts,
- Preventing the unauthorized removal of posts,
- Facilitating the removal and replacement of posts following damage or when otherwise required.
- The device requiring specialized tools for signpost removal, and
- The device being used strictly in accordance with the manufacturer's instructions.

Chris Ford [Bob O'Keefe/ Ross Walsh] RTA 1/3/2000.

From: Director, Traffic and Transport

Subject: Use of Segmental Signpost Fixing Devices

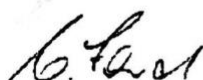
Date: 1/03/1999

The referenced memo directed that the use of these devices be suspended until otherwise directed.

The use of these devices is now permitted subject to:

1. the device requiring specialised tools for sign removal, and
2. the device being used strictly in accordance with the manufacturer's instructions.

Please note that there is no RTA specification, and hence no approved list, covering these devices. Users should therefore ensure that the above conditions for the use of any such device are strictly adhered to.



Chris Ford

VIC

VicRoads previously confirmed it had *no objection* to the use of ZERO WASTE Foundations on roadworks, provided the system is used consistently with VicRoads specifications (John Eldridge, 2001).

"We have no objection to the use of the ZERO WASTE Foundations on roadworks provided the system is used consistently with Vic Roads specifications".

John Eldridge 2001.

Relevant Vic Roads specifications include Standard Specification Section 714.

NB: recent upgrades to Vic Roads specs require:

- Units to protrude from ground level
- Footings to be a minimum of 450 mm depth

*These specs are for metal fixing devices and do not accommodate the improved efficiency of an advanced polymer fixing system

ZERO WASTE Foundations

- Are installed flush with ground level (providing no trip factors of litigation risks from rusting and dangerous metal protrusions)
- ZERO WASTE Foundations as shallow as 150 mm depth been field tested and as shallow as 350 mm impact tested by authorised authorities to remain undisturbed upon impact from a vehicle and avoid any disturbance of underground services

ZERO CIVIL is currently liaising with DoT

Victoria/VicRoads to formalise recognition of ZWF as an approved alternative socket system

WESTERN AUSTRALIA

"ZERO WASTE Foundations provide a significant cost benefit in replacing the damaged sign post by re-using the existing footing.

Our selection is not based on price alone, also the safety & saving aspects.

*The Smart Taper-lock (ZWF) allows the **quick replacement of posts**, with **no further effort required to the base** and **reduces risk to employees** by reducing time spent exposed to traffic!" MRWA*

[MRWA Specs 601 Signs](#)

Enquiries: Dan Sullivan on 9323 4162
Our Ref: 30-319-132 (H:\Branch Management\Technical Inquiries-
Correspondence\Signs & Pavement Markings\0014.doc)
Your Ref: NA



MAIN ROADS
Western Australia

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Waterloo Crescent
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EAST PERTH WA 6892
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TTY: (08) 9311 8430

Ms L Hoath
Marketing Manager
KDC Systems
20/25 Walters Drive
OSBORNE PARK WA 6017

Dear Ms Hoath


K-WEDGE SIGN FIXING SYSTEM

With reference to your previous correspondence regarding the K-Wedge System for sign fixing, Main Roads would like to advise the following.

- Our Specification 601 – Signs is currently being modified to incorporate a large number of changes, including the use of Circular Hollow Section (CHS) posts for signs used by Main Roads and / or its contractors. The specification will also be modified to include performance parameters for the footing details for the installation of signs using CHS posts.
- These changes will permit the use of the K-Wedge system for installation of signs using CHS posts. All installation should be undertaken according to the manufacturer's specifications and in accordance with Main Roads' specification and Guidelines.
- As previously advised, all sign installation and maintenance works are now contracted out through our Term Network Contracts using Main Roads' specification and guidelines. Those contractors would need to consider the benefits of the K-Wedge system as well as the additional specification requirements for CHS posts as opposed to RHS posts. Accordingly, any future use of your product would be at the discretion of these contractors.

I trust that this information meets your requirements. If you require any further information please contact Dan Sullivan on 9323 4162. In reply please quote file reference 30-319-132.

Yours sincerely

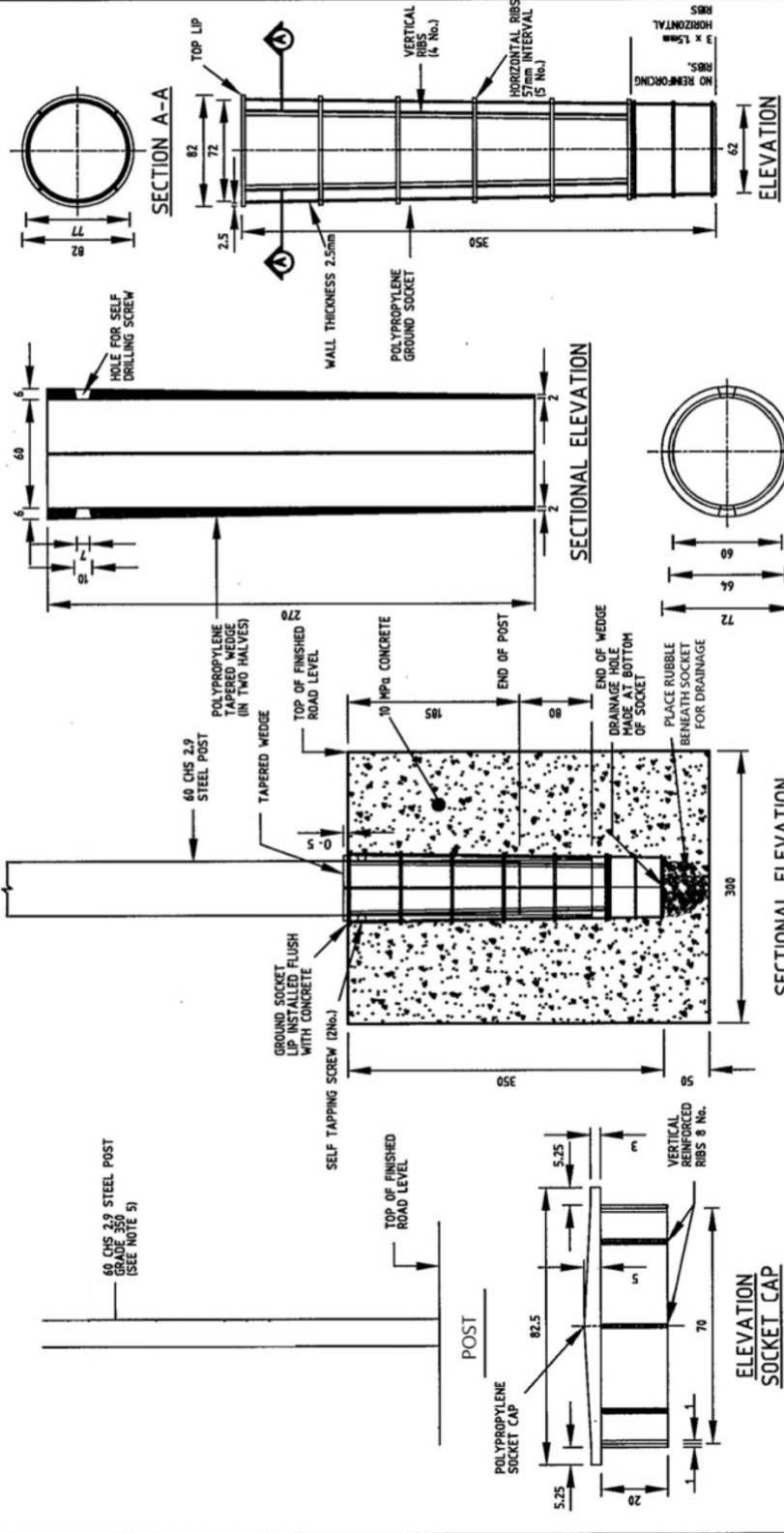
 R Grove
Manager Road and Traffic Engineering
August 13, 2001

AMENDMENTS

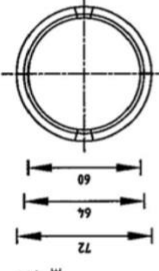
NO.	DESCRIPTION	APPROVED & DATE

MAIN ROADS
 Western Australia
 TECHNOLOGY AND INNOVATION
 ROAD AND TRAFFIC ENGINEERING BRANCH
 WATERLOO CRESCENT EAST PERTH WA
 TELEPHONE (08) 933 4111 Fax (08) 933 4119

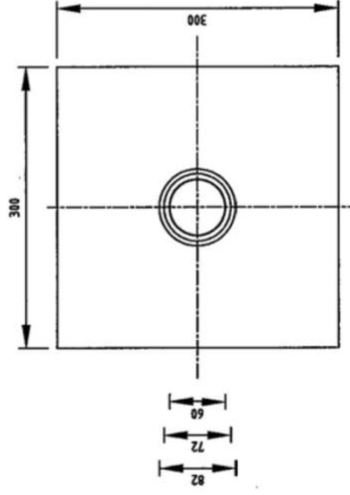
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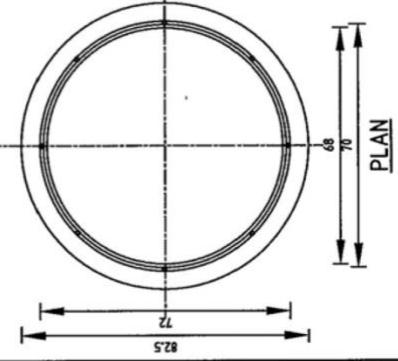
PLAN



SECTIONAL ELEVATION FOOTING



PLAN



- NOTES:
1. SMART FIXED & REMOVABLE POSTS ARE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND THIS DRAWING
 2. SOCKET CAN BE TRUNCATED AT ANY HORIZONTAL RIB AND GAFFA TAPE USED TO COVER BASE IF UNDERGROUND OBSTACLES ARE HIT WHEN INSTALLING
 3. SOCKET CAN BE INSTALLED 150 MM DEEP IN SOLID CONCRETE FOOTPATH OR TRAFFIC ISLAND/ 350 IN STANDARD INSTALL/ 650 IN SOIL.
 4. THE SOCKETS SHOULD BE CAPPED WHEN NOT USED.
 5. REFER TO MANUFACTURER'S WEB SITE FOR DETAILS smarterbar.com.au

SOUTH AUSTRALIA

*In reply please quote 2001 00308 03
Enquiries to Chris Town
Telephone 8343 2999*

Lisa Kasten-Hoath
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PO Box 381 North Beach
Western Australia

TRANSPORT SERVICES
33-37 Warwick Street
Walkerville SA 5081

PO Box 1
Walkerville SA 5081

Telephone 08 8343 2222
Facsimile 08 8343 2585

ABN 92 366 288 135

Dear Lisa,

USE OF TAPER-LOCK IN SA

Thank you for letter, regarding the use of the Taper-Lock post product for use in South Australia. With reference to the samples and documentation supplied to us, Transport Services Division will approve the use of the taper lock posts up to a maximum diameter of 80mm, supporting regulatory/warning type signs alike on roads for which the Department has the maintenance responsibility.

Please note that this Department does not approve products for use on all roads in South Australia. For the local road network, councils would have to give approval for use on their roads.

We approve this product for a period of two years after which a review of field performance will be undertaken before further approvals given.

Yours sincerely,

Wayne Buckerfield
Manager Traffic And Access Standards

18 April 2006

8.2.2 Sign posts

For signs less than 1m² in area, the post size is generally 50NB x 3.2mm CHS. Refer to Appendix. B for determination of post sizes suitable for larger signs or heights.

8.2.5 Posts in sleeves

There are certain situations where it is advisable to install the post into a sleeve inserted into the footing, such as:

1. Where a sign is located on an urban median strip where it may be struck frequently.
2. Where it may need to be removed occasionally, to accommodate the swept path of over-dimensioned vehicles when turning.

This arrangement is only appropriate for small posts up to 50mm nominal bore (60 O.D. CHS Posts). Details of a typical sleeve assembly are presented in Drawing No. 1368 (Appendix D). Variations on the basic theme are just as effective. **"ZERO WASTE Foundations have an 'as-of-right' approval on this basis"**

John .C.Douglas Qld MR

DOH&S

Dept of Occupational Health and Safety awarded ZERO WASTE Foundations the WorkSafe Award for: "**Outstanding achievement in the workplace in designing new innovative work systems that significantly reduce the risk of workplace injury**".

Successfully addressing the major causes of workplace injury

- Major cause of injury (digging and heavy labour)
- The major cause of serious injury (working in traffic)



STATE GOVT INNOVATION AWARD

Australian Small Business Development Corporation awarded ZERO WASTE Foundations the prestigious Innovation of the Year Award. Shown here is the inventor of ZERO WASTE Foundations being presented the award by the state's premier.

Innovation recognised





ZEROCIVIL

Smart Urban Pty Ltd
Trading as ZERO CIVIL

zerocivil.com