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POLYROAD PR21L

TIPES Certificate Renewal
Certificate No: 22/0001

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POLYROAD PR21L

SYNTHETIC DRY POWDER POLYMER STABILISATION BINDER

This Renewed Certificate relates to POLYROAD PR21L, for use as a stabilisation binder to be added to non standard/marginal pavement materials by using in situ stabilising or plant mix methodologies. Polyroad PR21L is a granular powder comprising a cationic polymer thermally bonded to fine ground limestone (calcium carbonate). Polyroad PR21L is a combination of two parts Polyroad and one part hydrated lime (by mass).

THIS RENEWAL CERTIFICATION RETAINS THE PARAMETERS RELATING TO THE ORIGINAL CERTIFICATE (ISSUED IN 2016) AS FOLLOWS:

- Factors relating to compliance with TIPES requirements
- The independently verified technical specification
- Assessment criteria and technical investigations

- Stabilisation mix design considerations
- Typical applications and installation guidance

KEY FACTORS ASSESSED:


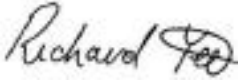
Factor 1 – Laboratory determination of mix design proportions - A formal mix design process determines the suitability of the product and application rate required in consideration of intrinsic parent material properties, including particle size distribution and Plasticity Index.

Factor 2 – Reduction in absorbed moisture of unbound granular pavement materials as demonstrated in the laboratory Capillary Rise test.

Factor 3 – A comparison against hydrated lime stabilisation binder with a binder content equivalent to that added into the composition of the PR21L product.

Factor 4 – Records of past application of the PR21L product in road construction in Australia.

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	Mark Steidle Governance Manager, TIPES	Richard Yeo Chief Operating Officer
Date of Renewal		
02/04/2022		

<p>This Transport Infrastructure Product Evaluation Scheme (TIPES) Renewal Certificate is issued by ARRB Group and supported by its road agencies. The Renewed Certificate has been issued on the condition that compliance is still achieved with the conditions stated. The product was originally assessed by a TIPES Product Evaluation Panel as being fit for its intended use. This remains valid given that the supplier has certified that no changes have been made to the material's composition and provided that the material is installed, used and maintained as set out in this Renewal Certificate.</p>		

STATEMENT OF CLAIM

Water in pavements is a major cause of pavement failure. Pavement materials stabilised with Polyroad PR21L are designed to resist the absorption of water as demonstrated through the capillary rise test.

ORIGINAL STATEMENT OF TECHNICAL OPINION

Polyroad PR21L stabilisation involves a process of 'internal waterproofing' of fine grained particles by way of incorporating an insoluble dry powdered polymer. This process is assessed using the laboratory capillary rise test and the pavement materials must fit a grading envelope and plasticity range.

It was the opinion of the TIPES Product Evaluation Panel Polyroad PR21L stabilisation binder, when added to some but not all unbound granular pavement materials, demonstrates a potential reduction in Capillary Rise as determined with Queensland Department of Transport and Main Roads Test Method Q125 (or its State Road Authority equivalents).

IMPORTANT NOTE:

The original technical assessment included a field trial which demonstrated Polyroad PR21L can successfully be incorporated into pavement materials using standard insitu stabilisation practices as defined by AustStab. The field trial also showed the potential for Polyroad PR21L to reduce the rate of capillary rise (as measured in the laboratory) of the treated material compared to the untreated material.

The field trial undertaken as part of this technical assessment did however not assess the longer term in service performance benefits of treating pavement

The original Technical Opinion was issued in respect of Polyroad PR21L being the particular Product submitted for product evaluation under TIPES by Polymix Industries Pty Ltd on 14 January 2014. This Technical Opinion remains valid but is expressly restricted to the Product having the same composition, features and characteristics as when submitted for TIPES evaluation. The original Technical Opinion is not applicable to, or valid in respect of, any subsequent modification, variation, enhancement or redevelopment of the Product and any representation that this Technical Opinion is referable to any other product is expressly forbidden.

REGULATORY COMPLIANCE & APPLICATION GUIDES

INTENDED APPLICATION OF THE PRODUCT

Polyroad PR21L is intended for use with non standard/ marginal granular materials in sealed roads. According to the design procedure supplied by Polymix, Polyroad PR21L is suitable for use with parent materials that

- have a PI < 12 (test method: AS 1289 3.3.1)
- have capillary rise results < 25% in 24 hours when treated with Polyroad PR21L (test method: AS 1141.53)
- have a particle size distribution (test method: AS 1289 3.6.1) within the limits shown in Table 1

Table 1: Parent material particle size distribution limits

Sieve size (mm)	Percent passing	
	Minimum	Maximum
37.5	100	100
26.5	95	100
19.0	85	100
13.2	65	100
6.7	50	100
2.36	35	95
0.425	20	65
0.075	10	30

MATERIAL SAFETY DATA SHEET

- Chemwatch Independent Material Safety Data Sheet Chemwatch: 4634-4, Version No: 7.1.1.1

PRODUCT MANUFACTURE

- Certificate of registration ISO 9001:2015 Registration No. 259303-2018-AQ-AUS-JAS-ANZ Expiry 12 July 2020, as updated

APPLICATION SPECIFICATION

- AustStab Model Specification for in situ stabilisation of local government roads using insoluble dry powdered polymers Version A 2007
- State Road Authority specifications for in situ stabilisation using powder binders
- State Road Authority Specification for manufacture and supply of stabilised plant mixed materials

NATIONAL DOCUMENTS

- Austroads APRG-TN14-0 (Technical Note)
- AustStab Technical Note 3B (Technical Note)
- Geopave Technical Note 53 (Technical Note)
- Austroads Guide to Pavement Technology Part 4D "Stabilised Materials"

ORIGINAL ASSESSMENT AND TECHNICAL INVESTIGATIONS

The original technical assessment of Polyroad PR21L is described in the report: TIPES Evaluation of Polyroad PR21L: Results of initial assessment, October 2015, ARRB Group Ltd.

SPECIAL CONDITIONS OF CERTIFICATION

1. It is a continued condition of certification that records are kept of applications of Polyroad PR21L in road construction where they are available to Polymix Industries. The records shall include material classification and mix design and quality assurance data that allow the verification of the quality of production and installation of the product. In addition, any post-construction monitoring or assessments should also be maintained. Ideally, where feasible, post construction monitoring and assessment should include a representative untreated section of road to act as a control against which the benefits of the treatment may be compared. These records shall be made available to ARRB Group Ltd on request and will be the subject of review for re-accreditation.
2. The original Technical Opinion is issued in respect of Polyroad PR21L being the particular Product submitted for product evaluation under TIPES by Polymix Industries Pty Ltd on 14 January 2014.

GENERAL CONDITIONS OF RENEWAL

1. This Renewal Certificate:
 - relates only to the product/system that is named and described on the front page and is expressly restricted to the product having the composition, features and characteristics when originally submitted for TIPES evaluation
 - is not applicable to, or valid in respect of, any subsequent modification, variation, enhancement or redevelopment of the product
 - any representation that this certificate is referable to any other product is expressly forbidden
 - is valid only within Australia
 - has to be read, considered and used as a whole document, it may be misleading and will be incomplete to be selective
 - is licenced for the promotion or sale of the product only to the company, firm, organisation or person named on the front page. No other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
 - is copyright and property of the ARRB Group Ltd (ARRB)
 - is governed by the laws of the State of Victoria, Australia and the jurisdiction of the courts of that State and courts of appeal therefrom.
2. Publications, documents, specifications, legislation, regulations, standards and the like referenced in the original Certificate (2016) were those that were current and/or deemed relevant by ARRB at the date

of issue or reissue of that Certificate.

3. This Renewal Certificate will remain valid for a 3 year period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:
 - are maintained at or above the levels which have been assessed and found to be satisfactory by ARRB
 - continue to be checked as and when deemed appropriate by ARRB under arrangements that it will determine
 - are reviewed by ARRB as and when it considers appropriate.
4. ARRB has used due skill, care and diligence in preparing the original Certificate and this Renewal Certificate, but no warranty is provided.
5. In issuing this Renewal Certificate, ARRB is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:
 - the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
 - the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
 - any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
 - any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal.
6. Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in the original Certificate and this Renewal Certificate are the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Australian Work Health and Safety (WHS) Act 2010, or of any other statutory, common law or other duty which may exist at the date of issue of this Renewal Certificate; nor is conformity with such information to be taken as satisfying the requirements of these Acts or of any statutory, common law or other duty of care.
7. TIPES logo & symbol(s) use are governed by "The Conditions for Use by ARRB Group Ltd and TIPES Product Organisations" and forms part of this certificate.