PRO-CAST

Solid Foundations,
Strong Futures.

PRECAST CONCRETE SOLUTIONS

CONCRETE ARCH CULVERTS

MS
SIRIM



INTRODUCTION

As part of our commitment to reducing carbon emissions, Pro-Cast concrete arches are manufactured using blended cements that enhance workability, long-term strength, and durability—particularly in marine, sewerage, and other harsh environments. Commonly used as bridge structures over waterways, these arches offer a sustainable and aesthetically pleasing alternative to traditional culvert crossings, while ensuring smooth, unobstructed water flow.

ADVANTAGES

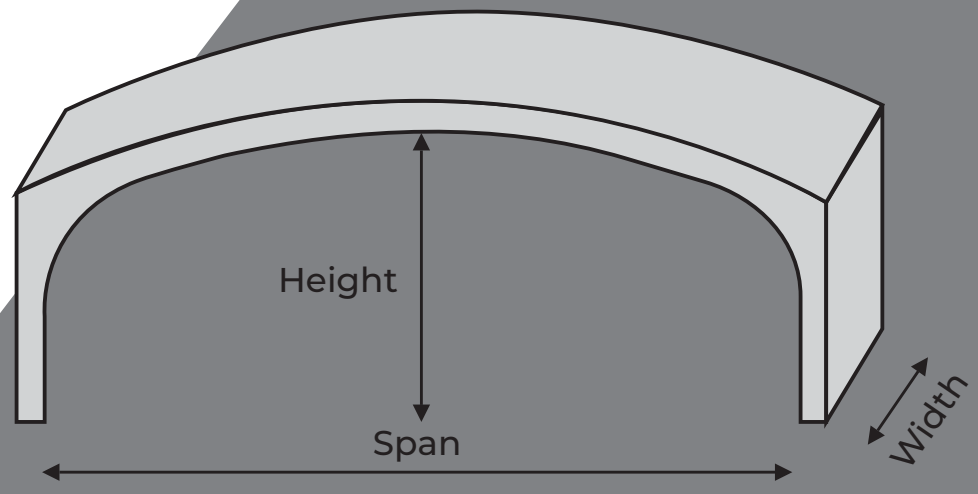
- Manufactured in a controlled environment for consistent quality
- Reduced maintenance costs with durable precast arch system
- Fully compliant with traffic loading standards
- Enables fast and efficient installation
- Minimizes disruption to existing water flow
- Requires less labour for installation

DESIGN CRITERIA

1. The Pro-Cast concrete arch is designed in compliance with:
   (a) BS 8110: Part 1 – Structural Use of Concrete
   (b) BD 31/01 – Loads for Highway Bridges
2. Concrete has a 28-day characteristic strength of 40 N/mm².
3. Hydrostatic pressure is prevented through a drainage system installed along the earth side near the arch soffit.
4. Pro-Cast arches are supplied with plain butt joints; gaps between units are to be filled with mortar.
5. Backfill next to the arch should consist of granular material with a minimum internal friction angle of 30°.
6. During construction, the maximum height difference in backfill behind the arch must not exceed 0.6m.

Type & Sizes

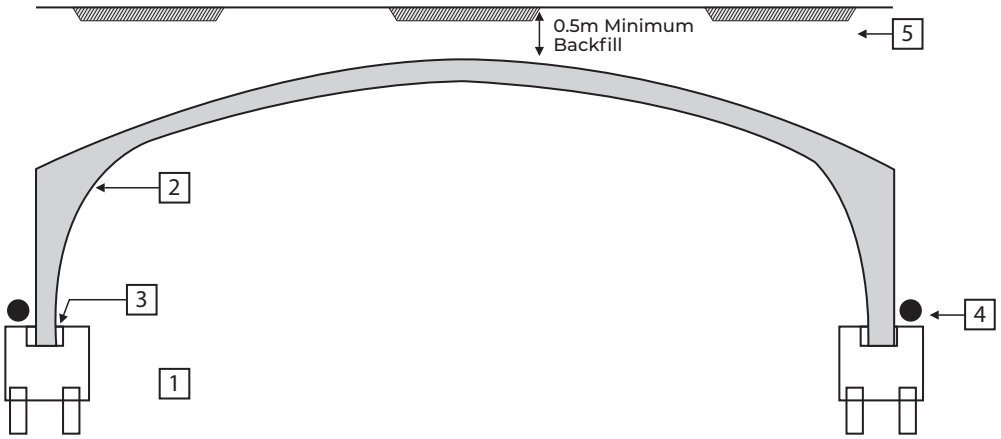
Span (mm)	H (mm)	W (mm)	Weight (tonne)
6514	2500	1200	8
6522	3000	1200	8.7
6530	3500	1200	9.4
8000	2500	1200	10.3
8015	3000	1200	10.9
8030	3500	1200	11.4
9500	2500	1200	12.5
9515	3000	1200	13.2
9530	3500	1200	14



DETAIL

CONSTRUCTION SEQUENCE

1. Construct pile foundation and place a mortar levelling pad on the footing.
2. Position the Pro-cast concrete arch in its final alignment.
3. Grout the pocket keyway and seal the joints between arch units.
4. Install drainage pipes along the earth side near the arch soffit.
5. Backfill around the arch with suitable material.



PRO-CAST

Professional Precast Sdn Bhd

+6 016-330 8365
03-2276 5255
www.pro-cast.co
lvanseah@pro-cast.co
12-3A, Level 12, Menara MBMR.
No 1, Jalan Syed Putra, 58000 Kuala Lumpur.