# *Test Certificate*

***This is to Certify that***

## Redibase
## Construction Tube Footing

Was tested under our supervision and performed satisfactorily, as set out in J.W. Wedler & Associates Ltd Test Report dated January 7th,1999, Reference No. C8-1734.

*February 10, 1999*

*Signed:* A.J. Kirkness, P.Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. J. KIRKNESS
10-2-99

J.W. WEDLER
& ASSOCIATES LTD.

# TEST REPORT

**Date:** January 7, 1999 **Reference No:** C8-1734

**To:** Robert Delmas Design and Drafting Service

**Re:** **Redibase Foundation Forms - Load Test**

**Test Significance:** The Redibase is a molded plastic form, 22.5 inches (0.57 metres) in diameter, designed to act as a form for poured -in-place concrete foundation pads for small structures. The Redibase form is typically placed on the foundation soil and a concentric pier is extended vertically from the base using a circular cardboard form tube 8 inches or 10 inches (200mm or 250mm) in diameter. The concrete within the completed form is generally unreinforced, although vertical reinforcing and anchor bolts can be placed within the stem.

Verification of the load-carrying capability of a typical unreinforced, hardened concrete foundation, cast within a Redibase form, was requested.

**Test Procedure:** Two prefabricated Redibase pad/piers were tested using a hydraulic prestressing jack to provide a concentric load. The base of each pad was supported on a grillage of 2 layers of 2 inch (nominal) lumber, and the load was applied to the tops of the stems through a 1 inch (nominal) lumber shim under a 3/4 inch thick steel plate.
Concrete having a nominal 28-day concrete strength of 20 MPa was used for the test samples.

**Test Results:** A total load of 112 kN (25,170 lb) was applied in approximately 10 kN (2,250 lb) increments to each pier.
No cracking, or other indications of failure of the concrete was apparent.
Testing was discontinued at the safe working limit of the test apparatus.

**Conclusions:** The test loads indicated an ultimate load capacity not less than 112 kN.
Allowing for a material resistance factor of 0.60 and an ultimate load factor of 1.5, the safe working load = 112 x 0.60 / 1.5 = 44.8 kN. (10,000 lb) (5.00 tons)

Or, Allowable Bearing Pressure = 175 kPa (3,600 psf)(1.8 tsf).

Under the B.C. Building Code, the normal requirement for Allowable Bearing Pressure for foundations not specifically designed is for a minimum capacity of 60 kPa. (1,200 lb/sq.ft.)(0.6 tons/sq.ft) and Table 9.4.4.1 of the Canadian Building Code sets out other Allowable Bearing Pressures for different types of soils.

Yours truly:

J. W. Wedler & Associates Ltd.

Per:

A. J. Kirkness, P.Eng.

PROVINCE OF BRITISH COLUMBIA
99

**Table 2:** **MAXIMUM REDIBASE SPACING (Exterior Footings)**
**[Roof Truss Spans up to 9metres (30 feet) supported on Exterior Walls]**

**A. Roof Snow Load 2.0 kPa**

Allowable Soil Bearing Pressure - kPa (psf)

| Floor Joist Span | 150 kPa (3000 psf) | 100 kPa (2000 psf) | 75 kPa (1500 psf) | 50 kPa (1000 psf) |
|---|---|---|---|---|
| **3.0m (10'-0")** | 2.3m (7'-8") | 1.5m (5'-0") | 1.1m (3'-8") | 0.8m (2'-8") |
| **4.0m (13'-4")** | 2.0m (6'-8") | 1.3m (4'-4") | 1.0m (3'-4") | - |
| **5.0m (16'-0")** | 1.8m (6'-0") | 1.2m (4'-0") | 0.9m (3'-0") | - |
| **6.0m (20'-0")** | 1.6m (5'-4") | 1.1m (3'-8") | 0.8m (2'-8") | - |

**B. Roof Snow Load 3.0 kPa**

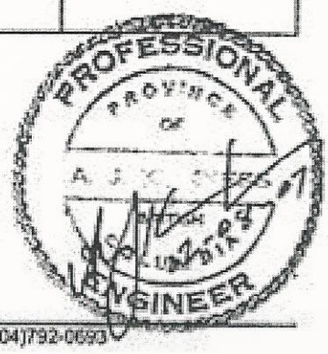
| | | | | |
|---|---|---|---|---|
| **3.0m (10'-0")** | 1.8m (6'-0") | 1.2m (4'-0") | 0.9m (3'-0") | - |
| **4.0m (13'-4")** | 1.6m (5'-4") | 1.1m (3'-8") | 0.8m (2'-8") | - |
| **5.0m (16'-0")** | 1.5m (5'-0") | 1.0m (3'-4") | 0.7m (2'-4") | - |
| **6.0m (20'-0")** | 1.4m (4'-8") | 0.9m (3'-0") | - | - |

**C. Roof Snow Load 4.0 kPa**

| | | | | |
|---|---|---|---|---|
| **3.0m (10'-0")** | 1.5m (5'-0") | 1.0m (3'-4") | 0.7m (2'-4") | - |
| **4.0m (13'-4")** | 1.4m (4'-8") | 0.9m (3'-0") | - | - |
| **5.0m (16'-0")** | 1.3m (4'-4") | 0.8m (2'-8") | - | - |
| **6.0m (20'-0")** | 1.2m (4'-0") | 0.8m (2'-8") | - | - |

**Assumptions:**

- Floor live Load 1.9 kPa (40 psf)
- Floor Dead Load 0.4 kPa ( 8 psf)
- Roof Dead Load 0.6 kPa (12 psf)
- Walls of timber frame construction with sheathing and siding.
- Roof Truss Span 9.0m (30 ft) - supported on exterior walls.



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# REDIBASE Construction Tube Footings

**Table 1:** **MAXIMUM REDIBASE SPACING (Interior Footings)**

| | Allowable Soil Bearing Pressure, kPa (psf) | | | |
|---|---|---|---|---|
| **Width of Floor Supported.** | **150 kPa (3000 psf)** | **100 kPa (2000 psf)** | **75 kPa (1500 psf)** | **50 kPa (1000 psf)** |
| **3.0m (10'-0")** | 4.4m (14'-4") | 2.9m (9'-8") | 2.2m (7'-4") | 1.5m (5'-0") |
| **4.0m (13'-4")** | 3.3m (11'-0") | 2.2m (7'-8") | 1.6m (5'-4") | 1.1m (3'-8") |
| **5.0m (16'-0")** | 2.6m (8'-8") | 1.8m (6'-0") | 1.3m (4'-4") | 0.9m (3'-0") |
| 6.0m (20'-0") | 2.2m (7'-4") | 1.5m (5'-0") | 1.1m (3'-8") | 0.7m (2'-4") |

**Assumptions:**

- Floor Live Load 1.9 kPa (40 psf)
- Floor Dead Load 0.4 kPa ( 8 psf)
- Width of Floor Supported = 0.5 x (average joist span)
- No Roof Load or Snow Load