

# Seamus Ryan Sand & Gravel Ltd.

Ballybeg, Toomevara, Nenagh, Co. Tipperary

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## Declaration of Performance & Type Test Report

### Aggregates for Unbound & Hydraulically Bound Material

**Aggregate Source:** Ballybeg, Toomevara, Co. Tipperary

**Brief Petrographic Description:** Limestone / Sandstone Sand & Gravel

**Period of Tests effective:** March 2016 – March 2017

**Method of approving & verifying the performance of these products – System 2+**

Aggregates produced at this source comply for use as:

#### **Aggregates for Unbound & Hydraulically Bound Material EN 13242:2002 (SR 21)**

"UNBOUND GRANULAR FILL (HARDCORE) FOR USE UNDER CONCRETE FLOORS AND FOOTPATHS"

#### 1. Geometrical properties:

##### 1.1. Coarse Aggregates

Gradings to EN 933-1		Target Percentage passing by mass								
Product Size (d/D)	Category 0/31.5 G <sub>A80</sub>	63mm (100)	31.5mm (80-99)	16mm (55-85)	8mm (35-65)	4mm (22-50)	2mm (15-40)	1mm (10-35)	0.5mm (0-20)	0.063mm (0-7)
Clause 804		100	98	80	55	40	30	22	12	6
Methylene Blue to EN 933-9							<2			

#### 1.2 Fines Content

All coarse Aggregates for conforms to Cat F1

##### 1.1.3 Flakiness Index to EN 933-3

Conform to **Cat FI<sub>20</sub>**

## 2. Tests for Mechanical & Physical Properties:

Property Requirement & Test Method	Declared Value / Category
Resistance to Wear to EN 1097-1 (micro-Deval coefficient)	NR
Resistance to Fragmentation to EN 1097-2 (Los Angeles)	LAV = (24-29)
Shell Content to EN 933-7:1998	Nil
Particle Density & Water Absorption to EN 1097-6	Apparent Density: 2.69 Mg/m <sup>3</sup> S.S. Dry Density: 2.56 Mg/m <sup>3</sup> Oven dry Density: 2.48 Mg/m <sup>3</sup> Water Absorption: 1.5 %

## 3. Test for Thermal & Weathering Properties:

Durability – Magnesium Sulfate to EN 1376-2	MS = 15
Volume Stability – Drying Shrinkage to EN 1367-4	NR
Liquid Limit	19

## 4. Tests for Chemical Properties of Aggregates: \*

Chemical properties: EN 1774-1	Chlorides – to clause 7	<0.001%
	Acid Soluble Sulphate - to clause 12	ASS = < 0.1%
	Total Sulphur - to clause 11	TS = < 0.1%
	Water Soluble Sulphate	WS = < 0.1%
Martin Flynn	Title: Quality Laboratory	Date: March 2016



**Seamus Ryan Sand & Gravel Ltd.**  
Ballybeg, Toomevara, Nenagh, Co. Tipperary  
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**EN 13242:2002+SR 21 2014**

**Aggregates for hydraulically bound and unbound materials for civil engineering work and road construction**

"UNBOUND GRANULAR FILL (HARDCORE) FOR USE UNDER CONCRETE FLOORS AND FOOTPATHS"

**CI. 804**

<b>Particle shape</b>	Category	<i>Fl</i> 20
<b>Particle size</b>	Designation	0/31.5 G <sub>A80</sub>
<b>Particle Density</b>	Declared Value	2.69 Mg/M <sup>3</sup>
<b>Cleanliness</b>		
Fine Quality	Pass/fail threshold	3 %
	Category	(MB, <sub>6</sub> )
Shell Content	Category	(SC <sub>10</sub> )
<b>Resistance to Fragmentation / crushing</b>	Category	LA <sub>30</sub>
<b>Composition /content</b>		
Chlorides	Declared Value	(0.001% C)
Acid soluble sulphates	Category	AS 0.2
	Declared Value	<AS 0.1
Total Sulphur	Pass/fail threshold	(1% S)
	Declared Value	<TS 0.1
<b>Water Absorption</b>	Declared Value	(1.5 % WA)
<b>Emission of radioactivity -</b>	Declared Value as requested	
<b>Release of Heavy Metals -</b>		
<b>Release of Polyaromatic carbons -</b>	Threshold values valid in	
<b>Release of other dangerous substance</b>	Place of use	
<b>Durability against Freeze/Thaw</b>	Category	F 4 or MS 25
<b>Durability against Alkali Silica reaction</b>	Declared Value as requested	