

## Product Evaluation

### RE: Review of 3M Diamond Grade DG<sup>3</sup> 4084 Series Fluorescent Orange Reflective Sheeting

#### **PRODUCT**

The 3M Diamond Grade DG<sup>3</sup> Fluorescent Orange Reflective Sheeting incorporates “Full Cube” technology for optimal performance. The 3M Diamond Grade DG<sup>3</sup> Fluorescent Orange Reflective Sheeting is manufactured by 3M Canada located in London, Ontario.

#### **VENDOR CLAIMS AND INFORMATION**

##### **CLAIMS**

The 3M DG<sup>3</sup> Fluorescent Orange reflective sheeting provides higher visibility during day light than the ordinary non-fluorescent colored sheeting's. The 3M DG<sup>3</sup> reflective sheeting design means that the entire cube surface is reflective. Product web link:

[http://solutions.3m.com/wps/portal/3M/en\\_US/GovernmentSolutions/Home/ProductInformation/OnlineCatalog/?PC\\_7\\_RJH9U5230GO250IANS2O1A3I71000000\\_nid=W2JHZHWJLqsJJQ2BMCSCVqITV4QQWKC2Hbl](http://solutions.3m.com/wps/portal/3M/en_US/GovernmentSolutions/Home/ProductInformation/OnlineCatalog/?PC_7_RJH9U5230GO250IANS2O1A3I71000000_nid=W2JHZHWJLqsJJQ2BMCSCVqITV4QQWKC2Hbl)

##### **DESCRIPTION**

The 3M DG<sup>3</sup> reflective sheeting material consists of full cube prismatic lens elements with a distinctive diamond seal pattern visible from the face of a smooth surface. Its optical elements are 100% efficient, returning almost 60% of available light, nearly double that of traditional prismatic sheeting.

##### **POTENTIAL USAGE**

The 3M DG<sup>3</sup> reflective sheeting performs at all sight distances including short and medium sight distances and where signs are positioned in disadvantaged locations.

##### **STANDARDS**

The 3M DG<sup>3</sup> reflective sheeting material has been proposed to ASTM as Type XI sheeting and is designed as a replacement for all types of reflective sign sheeting in use today.

#### **ALBERTA TRANSPORTATION COMMENTS**

##### **EXPERIENCE**

Alberta Transportation has no experience with this product. Alberta Infrastructure and Transportation uses fluorescent orange reflective sheeting material conforming to Standard Specifications for Highway Construction, Specification 7.1 Traffic Accommodation and Temporary Signing.

##### **APPLICABLE STANDARDS**

The Alberta Transportation specification for fluorescent orange Reflective Sign Sheeting Material is as follows:

Standard Specification for Highway Construction, Specification 7.1 Traffic Accommodation and Temporary Signing

The Departments current standard for Temporary Signing is Fluorescent Orange sheeting meeting the requirements of ASTM D4956, Type VIII.

##### **RECOMMENDATIONS:**



Transportation

Product ID: 8250-2-3-5-2  
Initiation Date: February 2006  
Revision Date: June 22, 2009

3M DG<sup>3</sup> 4084 series reflective sheeting material will be listed as a Proven Product on Alberta and Transportation Products List, Sign and Support System – Temporary Orange Work Zone/Construction Signs – Proprietary.

**PRODUCT COMPARISONS to ASTM STANDARDS**

Minimum Typical Coefficient of Retroreflection (R<sub>A</sub>) cd/ft<sup>2</sup> (cd.1x<sup>-1</sup>.m<sup>-2</sup>) of 4084 series sheeting:

Observation Angle		Entrance Angle	Fluorescent Orange
3M (4084)	0.2°	-4°	200
3M (3924)	0.2°	-4°	250
ASTM (Type IX)	0.2°	-4°	115
proposed (Type XI)	0.2°	-4°	200
3M (4084)	0.2°	+30°	75
3M (3924)	0.2°	+30°	180
ASTM (Type IX)	0.2°	+30°	65
proposed (Type XI)	0.2°	+30°	75
3M (4084)	0.5°	-4°	140
3M (3924)	0.5°	-4°	130
ASTM (Type IX)	0.5°	-4°	72
proposed (Type XI)	0.5°	-4°	140
3M (4084)	0.5°	+30°	52
3M (3924)	0.5°	+30°	60
ASTM (Type IX)	0.5°	+30°	41
proposed (Type XI)	0.5°	+30°	52

**TRIAL PROJECTS**

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