

**Dagangan** : INSULATION BOARD

Nama Barangan : Polyisocyanurate Insulation Board

Jenama : Xtratherm

**Kod Tarif (Perintah Duti Kastam 2012) :**

3921.13 110

**Tarikh Kelulusan** : 27 Januari 2015

Barangan di namakan sebagai *insulation board* berbentuk segiempat bujur dengan saiz 50 mm (tebal) x 1200 mm (lebar) x 2400 mm (panjang).

Permukaan atas dan bawah barangan terdiri daripada satu lapisan berwarna *buff* yang dinyatakan oleh pemohon sebagai *mineral coated glass* manakala bahagian tengah berwarna kuning cair yang dinyatakan sebagai *Polyisocyanurate*.

Komposisi barangan berdasarkan maklumat pemohon (Lampiran 1) adalah terdiri daripada 100% *Polyisocyanurate* yang dilapisi oleh *mineral coated glass* pada kedua-dua permukaan.

Kegunaan barangan adalah sebagai penebat haba. Berdasarkan permohonan (lampiran 1) : *use as a partial fill thermal insulation in external masonry cavity walls up to to 25 m in height in new domestic and non-domestic buildings.*

Barangan diimport dalam bentuk kepingan.

Sifat-sifat fizikal dan kimia barangan :

<b>Appearance</b>	<i>Cream/Buff coloured foam : either foil, mineral glass, bitumen, gypsum, timber, magnesium silicate facings.</i>
<b>Odour</b>	<i>Slight, non-offensive smell</i>
<b>pH</b>	<i>Neutral</i>
<b>Product Density</b>	<i>32kg/m<sup>3</sup></i>
<b>Solubility In Water</b>	<i>Not Soluble</i>

Barangan adalah diperbuat daripada 100 % *Polyisocyanurate* yang dilapisi oleh *Mineral coated glass* pada kedua-dua permukaan.

Berdasarkan laman web [www.xtratherm.com](http://www.xtratherm.com), barangan adalah sejenis ***Polyisocyanurate insulation board***.

***Polyisocyanurate*** berasaskan laman web wikipedia :

***Polyisocyanurate***, also referred to as ***PIR, polyiso, or ISO***, is a thermoset plastic typically produced as a foam and used as rigid thermal insulation. Its chemistry is similar to polyurethane (PUR) except that the proportion of methylene diphenyl diisocyanate (MDI) is higher and a polyester-derived polyol is used in the reaction instead of a polyether polyol. Catalysts and additives used in PIR formulations also differ from those used in PUR.

Barangan merupakan sejenis *cellular* dan *rigid insulation*.

Barangan diimport dalam bentuk kepingan (*sheets*).

Berdasarkan risalah yang disertakan oleh pemohon (Lampiran 1C), barangan merupakan sejenis *rigid polyisocyanurate modified polyurethane foam boards with a composite foil facing on both sides*.

Barangan ini sesuai diperjeniskan di bawah kod tarif **3921.13 110** sebagai ***rigid cellular sheets of polyurethanes***.

Berdasarkan fakta, barangan adalah diperbuat daripada 100 % *Polyisocyanurate* dan dilapisi dengan *mineral coated glass*. Ini adalah menepati kehendak EN HS 2012 muka surat VII-39-13 iaitu :-

## **Combinations of plastics and materials other than textiles**

*This Chapter also covers the following products, whether they have been obtained by a single operation or by a number of successive operations **provided** that they retain the essential character of articles of plastics:*

- (a) *Plates, sheets, etc., incorporating a reinforcement or a supporting mesh of another material (wire, glass fibres, etc.) embedded in the body of the plastics.*

Barangan adalah terdiri daripada *Polyisocyanurate* di mana ianya merupakan kategori *Polyurethanes*.

Penghasilan *Polyisocyanurate* berasaskan Wikipedia :

*The reaction of methylene diphenyl diisocyanate (MDI) is higher temperatures compared to the reaction temperature for the manufacture of PUR (polyurethane). At these elevated temperatures and in the presence of specific catalysts, MDI will first react with itself, producing a stiff, ring molecule, which is reactive intermediate (a tri-isocyanate isocyanurate compound). Remaining MDI and the tri-isocyanate react with polyol to form a complex poly (urethane-isocyanurate) polymer (hence the use of abbreviation PUI as an alternative to PIR), which is foamed in the presence of a suitable blowing agent.*

Ini juga sesuai sebagaimana keterangan EN HS 2012 muka surat VII-3909-2 iaitu :-

### **(3) Polyurethanes**

*This class includes all polymers produced by the reaction of polyfunctional isocyanates with polyhydroxy compounds, such as, castor oil, butane-1, 4-diol, polyether polyols, polyester polyols. Polyurethanes exist in various forms, of which the most important are the foams, elastomers, and coatings. They are also used as adhesives, moulding compounds and fibres. These products are often traded as one part of a multi-component system or set.*

*This group also includes mixtures of polyurethane and unreacted polyfunctional diisocyanate (e.g., toluene diisocyanate).*

Berdasarkan fakta, barangan merupakan sejenis *rigid polyisocyanurate modified polyurethane foam boards with a composite foil facing on both sides*. Berdasarkan buku *Encyclopedia Of Polymer Science and Engineering*:-

*Polyurethane usually produced by the reaction of a polyfunctional isocyanate with a polyol or other reactant containing two or more groups reactive with isocyanate, most often hydroxyls. The polyfunctional isocyanates can be aromatic, aliphatic, cycloaliphatic, or polycyclic in structure and can be used directly as produced or modified. Examples of commercial modifications of isocyanates :-*

<i>Modification</i>	<i>Description</i>	<i>Applications</i>
<b>urethane</b>	<i>MDI and low molecular weight polyether diol</i>	<i>elastomers; RIM</i>
	<i>TDI and low molecular weight triol</i>	<i>coatings</i>
	<i>MDI and polyester polyol</i>	<i>elastomers</i>

Keterangan ini sesuai dengan keterangan EN HS 2012 muka surat VII-39-16 iaitu :-

(B) **Classification when there is no subheading named Other in the same series**

(1)

(2) **Subparagraph (b) (2)** of Subheading Note 1 deals with the classification of chemically modified polymers. These are to be classified in the same subheading as the unmodified polymer when there is no subheading named Other in the same series of subheadings under consideration.

Barangan merupakan sejenis *cellular* dan *rigid insulation*. Berdasarkan laman web Wikipedia: *Polyisocyanurate, also referred to as PIR, polyiso, or ISO, is a thermoset plastic typically produced as a foam and used as rigid thermal insulation.*

Keterangan ini adalah sesuai dengan EN HS 2012 muka surat VII-39-12 iaitu :-

**Cellular plastics**

*Cellular plastics are plastics having many cells (either open, closed or both), dispersed throughout their mass. They include **foam plastics**, expanded plastics and microporous or microcellular plastics. They may be either flexible or rigid.*

Barangan diimport dalam bentuk *sheet*. Ini sesuai sebagaimana keterangan EN HS 2012 muka surat VII-39-3 iaitu :-

10 - *In headings 39.20 and 39.21, the expression plates, sheets, film, foil and strip applies only to plates, sheets, film, foil and strip (other than those of Chapter 54) and to blocks of regular geometric shape, whether or not printed or otherwise surface-worked, uncut or cut into rectangles (including squares) but not further worked (even if when so cut they become articles ready for use).*

Barangan tidak sesuai diperjeniskan di bawah *heading 3920* kerana barangan adalah sejenis *cellular* dan terdiri daripada *Polyisocyanurate* yang dilapisi dengan *mineral coated glass*. Ini sesuai dengan keterangan EN HS 2012 muka surat VII-3920-2 iaitu :-

*This heading **does not cover** products which have been reinforced, laminated, supported or similarly combined with materials other than plastics (heading 39.21). For this purpose "similarly combined" must be combinations of plastics with materials, other than plastics, which enhance the strength of the plastic material (e.g., embedded metal mesh and woven glass fabric, as well as mineral fibres, whiskers and filaments).*

*This heading also **excludes** cellular products (**heading 39.21**) and strip of plastics, of an apparent width not exceeding 5 mm (Chapter 54).*

Barangan mendapat liputan di dalam EN HS 2012 muka surat VII-3921-1 seperti berikut :

**39.21 – Other plates, sheets, film, foil and strip, of plastics.**

- Cellular :

3921.11 -- *Of polymers of styrene*

3921.12 -- *Of polymers of vinyl chloride*

**3921.13 -- Of polyurethanes**

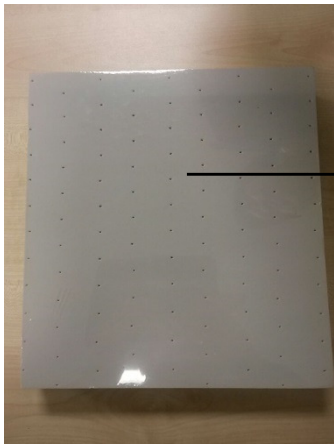
3921.14 -- *Of regenerated cellulose*

3921.19 -- *Of other plastics*

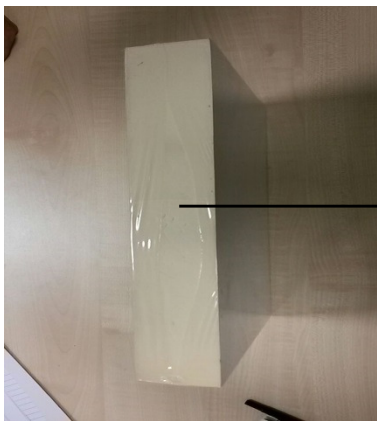
3921.90 -- *Other*

*This heading covers plates, sheets, film, foil and strip, of plastics, **other than** those of heading **39.18, 39.19** or **39.20** or of **Chapter 54**. It therefore covers only cellular products or those which have been reinforced, laminated, supported or similarly combined with other materials. (For the classification of plates, etc. combined with other materials, see the General Explanatory Note.)*

*According to Note 10 to this Chapter, the expression “plates, sheets, film, foil and strip” and to blocks of regular geometric shape, whether or not printed or otherwise surface-worked (for example, polished, embossed, coloured, merely curved or corrugated), uncut or cut into rectangles (including squares) but not further worked (even if when so cut they become articles ready for use).*



Mineral Coated Glass



Polyisocyanurate