



Green Label Product

Unplasticized Polyvinylchloride Pipes not used for Drinking Water (TGL-120-16)

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TGL-120-16**Unplasticized Polyvinylchloride Pipes not used for Drinking Water**

1. Background

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2. Scope

This product specification covers rigid polyvinylchloride plastic pipes made of polyvinylchloride without plasticizer. **Except** Unplasticised polyvinyl chloride pipe for drinking water

3. Definitions

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4. General Requirements

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5. Product Environmental Requirements

5.1. PVC resin used as raw material for the production of the unplasticized PVC pipes not used for drinking water pipes must comply with the following;

5.1.1 Its residual vinyl chloride monomer (VCM) must not exceed 1 mg/kg.

5.1.2 Clean technology must be implemented in manufacturing processes wherein;

1) Chlorine shall not be sourced from production plants using graphite anodes, mercury cells or asbestos diaphragms

2) VCM shall be sourced from non-mercury production processes.

Verification method

The applicant must submit the following documents provided by the relevant PVC resin manufacturers:

1. Certificated or laboratory test result for compliance verification of vinyl chloride monomer as defined in requirement no. 5.1.1. where the test methods must follow ISO 6401 or ASTM D3749 or other equivalent standards.
2. Declaration letter defining that the manufacturing process meets the special requirements defined in 5.1.2

in the event of any conflict arising, the original criteria in that is to be final authority

5.2. The products must not contain heavy metals and their compounds e.g. cadmium, mercury, lead and hexavalent chromium. In the case of heavy metal contamination including cadmium, mercury, lead, hexavalent chromium in products caused by impurities and contaminated from the raw materials shall be not exceeding the specified criteria as in Table 1⁴

Table 1 Specified criteria for determining the amount of heavy metals and heavy metal compounds.

Heavy metals	Amount (mg/kg)
Cadmium (Cd)	≤100
Mercury (Hg)	≤1,000
Lead (Pb)	≤1,000
hexavalentChromium (Cr ⁶⁺)	≤1,000

Verification method

The applicant shall submit test results of cadmium, mercury, lead and hexavalent chromium where the accepted test methods followed are IEC 62321-3-1⁵ or IEC 62321-4⁶ or IEC 62321-5⁷ or IEC 62321-7-2⁸, as the case may be, or other equivalent standards.

5.3. The products must composed of unplasticized PVC pipes or fittings components of that are recycled (recycle content) as the following criteria;

- 5.3.1 The manufacturing process of the product must be composed of recycled unplasticized PVC pipes or fittings components in the manufacturing steps. The products must meet the quality standards (reference quality according to TIS or international standards)
- 5.3.2 Recycled unplasticized PVC pipes or fittings in the manufacturing process must have source details of recycled unplasticized PVC pipes or fittings.

Remark: The recycled unplasticized PVC pipes or fittings components and the source proofs are proceeded according to the details as Appendix 3

⁴ Restriction of the use of certain hazardous substances (RoHS).

⁵ IEC 62321-3-1: Determination of certain substances in electrotechnical products - Part 3-1: Screening - Lead, mercury, cadmium, total chromium and total bromine using X-ray fluorescence spectrometry.

⁶ IEC 62321-4: Determination of certain substances in electrotechnical products - Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS.

⁷ IEC 62321-5: Determination of certain substances in electrotechnical products - Part 5: Cadmium, lead and chromium in polymers and electronics and cadmium and lead in

metals by AAS, AFS, ICP-OES and ICP-MS.

8 IEC 62321-7-2: Determination of certain substances in electrotechnical products - Part 7-2: Determination of hexavalent chromium (Cr(VI)) in polymers and electronics by the colourimetric method.

Verification method

The applicant must submit the following documents

1. Declaration letter of recycled unplasticized PVC pipes or fittings components percentage in the manufacturing process of products.
2. Declaration letter of recycled unplasticized PVC pipes or fittings component sources in the manufacturing process issued by the source receiving the unplasticized PVC pipes or joints.

5.4. The product must specify any one of the following types of plastic information or symbol.

5.4.1 The product shall display a phrases as a following, “รีไซเคิลได้ห้ามเผา” or “Recyclable/Do not burn”.

5.4.2 The product shall specify types of plastic symbol according to the Thai Industrial standard. The new recycled plastic symbol, TIS 1310⁹ or with an acronym indicating plastic type according to ISO 1043¹⁰ or ISO 11469¹¹

Verification method

The applicant shall submit a letter for declaration of compliance to requirement no.5.4.1. Or a letter of declaration that the product shows the symbol indicating the type of plastic as compliance to requirement no.5.4.2., and attach other evidences *e.g.* samples or photo of products that disclose information or symbol of plastics.