Certificate Number: 00-LD196444/2-PDA

Confirmation of Product Type Approval 08/JUN/2010

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This is to certify that, pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 20/SEP/2010. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 19/APR/2015 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

GEBERIT INTERNATIONAL AG
Model Name(s): HDPE

Presented to:
GEBERIT INTERNATIONAL AG
SCHACHENSTRASSE 77
JONA
Switzerland

Intended Service:	Sanitary drains, inert gas water seal and scrubber effluent lines
Description:	High density polyethylene pipes and fittings; sizes: 32 mm, 40 mm, 50 mm, 56 mm, 63 mm, 75 mm, 90 mm, 110 mm, 125 mm 160 mm.
Ratings:	PN 1.5, Maximum service temperature 73°C, Maximum external pressure: 32mm to 40mm - 1.66 bar; 50 mm to 63 mm - 1 bar; 75 mm - 0.46 bar; 90 mm to 125 mm - 0.4 bar; 160 mm - 0.7 bar.
Service Restrictions:	1. Usage limited to applications where "no fire endurance test required" by Table 4-6-3/1 of the ABS Steel Vessel Rules and is to be fitted only on open decks and within tanks, cofferdams, void spaces, pipe tunnels and ducts, as no fire endurance test or flame spread test have been carried out in accordance with 4-6-3/5.11 and 4-6-3/5.13 of the ABS Steel Vessel Rules. 2. Not to be used in fire main. 3. Not to be installed in areas classified as "hazardous" by 4-8-4/27 of the ABS Steel Vessel Rules or 4/1.7 of the ABS MODU Rules. 4.Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. Where plastic pipes are to be utilized for any installation within tanks or other locations which may be subject to a vacuum condition inside the pipe or a head of liquid on the outside of the pipe, external pressure is to be considered. The pipe is to be designed for an external pressure of not less than the sum of the pressure imposed by the maximum potential head of liquid outside the pipe plus full vacuum of 14.5 psi (1 bar) inside the pipe. The maximum external pressure for a pipe is to be determined by dividing the collapse test pressure by a safety factor of 3. This collapse pressure

	may be verified experimentally or determined by a combination of testing and calculation methods. These details are to be submitted to ABS before installation of the pipe, for ABS approval on a case by case basis.
Comments:	1. Joining techniques are to be in accordance with the manufacturer's installation guidelines. 2. Pipes and fittings are to be permanently marked with identification including pressure rating, standard of manufacture and material with which it is made. 3. For each application, details of axial strength are to be submitted for review.
Notes / Documentation:	This Product Design Assessment (PDA) is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.
Term of Validity:	This product/model is covered under Product Design Assessment (PDA) Certificate # 00-LD196444/2-PDA, dated 20/Apr/2010. This PDA Certificate expires 19/Apr/2015. It will remain valid for 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first). It is valid for all vessels contracted on or before the date of the Rules used in this evaluation.
ABS Rules:	2010 Steel Vessel Rules 1-1-4/7.7, 4-6-3/5.1, 4-6-3/5.3, 4-6-3/5.7, 4-6-3/5.9, 4-6-3/7.3, 4-6-3/11.3.1
National Standards:	
International Standards:	
Government Authority:	
EUMED:	
Others:	

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	00-LD196444/2-PDA	20/APR/2010	19/APR/2015

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.