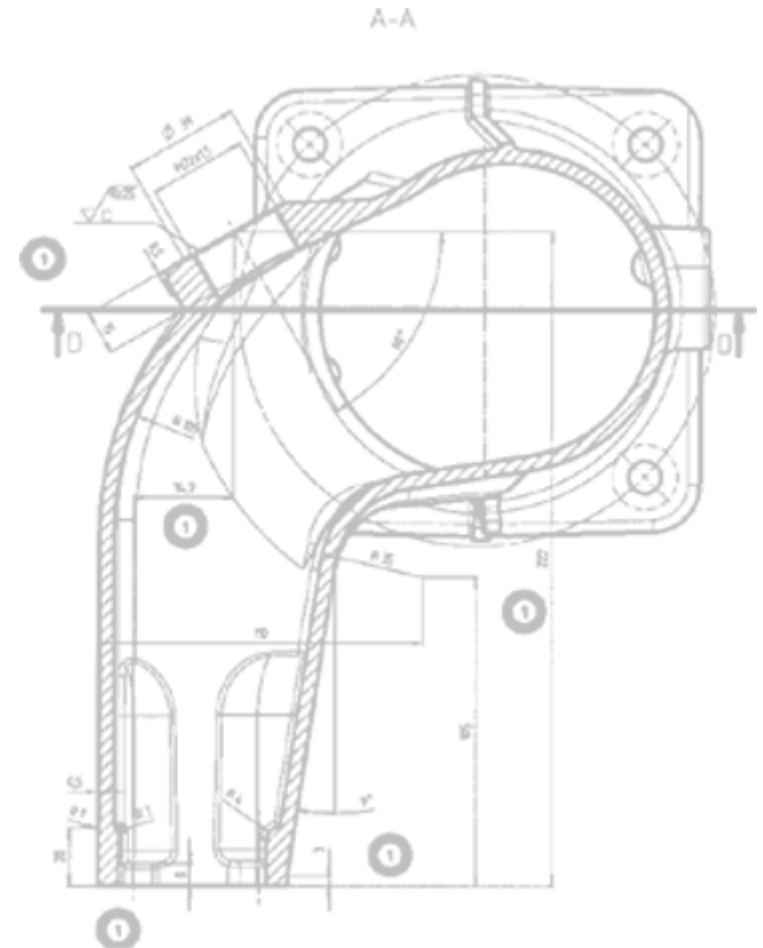


Future Emission Requirements For Recreational Craft CI Engines

IMEC – Euromot Position

DG ENTR
Brussels
20 Feb 2008



The CI Engine Manufacturers

- IMEC and Euromot established a joint task force to support specific interests of CI engine manufacturers
- Members supplying the RCD and high speed marine markets:
 - Caterpillar
 - Cummins/CMD
 - MTU
 - Nanni
 - Perkins
 - Vetus
 - Volkswagen
 - Volvo-Penta
 - Yamaha
 - Yanmar

Nonroad Markets Require Harmonisation

- Engine manufacturers strive to supply environmentally friendly technology that is technically and economically feasible
- Nonroad markets are different to on-highway businesses:
 - Numerous applications with highly specific technical constraints and demands
 - Mostly low volume sales niches
 - Adaption of on-highway technology requires significant development efforts
- The primary objective for nonroad mobile machinery manufacturers is the international harmonisation of regulations: “One product for the global markets”
- Broadly aligned NRMM regulations already established in
 - EU, USA, Japan, China, Korea, South America; others follow
 - Global Technical Regulations for testing NRMM being developed at UN-ECE; working group is chaired by European Commission

Position of the IMEC Euromot Task Force: A Two-Step Approach

1. Align with international regulations on engines > 37 kW
 - Introduce a next Stage II of emission limits for engines > 37 kW harmonised with the US-EPA NPRM on marine engines <30 L/Cyl
 - Introduce an averaging scheme

2. Provide flexibility provisions for Small and Medium Enterprises (SME)
 - Maintain current Stage I for engines < 37 kW
 - Relief provisions for small volume manufacturers and marinizers

- Equivalency with nonroad (97/68/EC) and onroad (88/77/EC and later) certificates

The IMEC-Euromot Proposal on Emission Limits

			PM in g/kWh	HC+NOx in g/kWh
	Disp.<0,9 l/cyl	P<18kW	RCD stage 1	RCD stage 1
	Disp.<0,9 l/cyl	18kW<P<37kW	RCD stage 1	RCD stage 1
2012	Disp.<0,9 l/cyl	37kW<P<75kW	0.3	7.5
2014 ¹	Disp.<0,9 l/cyl	37kW<P<75kW	0.3	4.7
2014 ¹	Disp.<0,9 l/cyl	37kW<P<75kW	0.2	5.8
2012	Disp.< 0,9 l/cyl	P>75 kW	0.15	5.8
2013	0,9 l/cyl <Disp.< 1,2 l/cyl	P>75kW	0.14	5.8
2014	1,2 l/cyl< Disp.< 2,5 l/cyl	P>75kW	0.12	5.8
2013	2,5 l/cyl <Disp.< 3,5 l/cyl	P>75kW	0.12	5.8
2012	3,5 l/cyl <Disp.< 7,0 l/cyl	P>75kW	0.12	5.4

¹: Engines with 2014 model year, a displacement below 0.9 L/cyl and maximum engine power above 19kW and at or below 75kW may be certified to **either** PM 0.3 g/kWh and HC+NOx 4.7 g/kWh **or** PM 0.2 g/kWh and HC+NOx 5.8 g/kWh.

Path Forward

- The IMEC-Euromot Task Force and its member companies envisage and highly appreciate a close consultation with the contractors
- Developing and assessing scenarios will require a thorough consideration of international regulations.
The Task Force is fully committed to support this process

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