

This questionnaire is designed to gather information from IALA members on their experiences with the use of plastic buoys. This will then be collated and used to enable members to make informed choices on the selection of the most appropriate material for their specific buoy application.

1. How many buoys do you have in your current buoy fleet ? 52

2. Regarding the materials of construction, how many are:

Steel	37
Composite metal & plastic	
Plastic	15
Other (please specify)	

3. Buoy fleet by buoy body diameter and material, please complete the table below:

Material	1m dia or less	1 to 2.2 m dia	Greater than 2.3m dia
Steel			37
Composite metal & plastic			
Plastic			15
Other (please specify)			

4. For your plastic buoy fleet, what type of plastic material is used ?

UV stabilised medium density polyethylene.

5. Are the plastic buoy bodies filled or empty ?

Filled

1

Empty

14

Please specify filler typeClosed filler polyurethane foam.....

6. How many years have you been using plastic buoys ? 5

7. Regarding the location / conditions of service for your plastic buoys, check the boxes that apply:

Inshore	
Offshore	X
Exposed	X
Sheltered	
Breaking waves	
Dries at low tide	
Severe UV exposure	X
Severe sub zero temperature	

8. Are your plastic buoys a commercial design or your own authority's design ?

Commercial Design

☒

Own Design

☐

9. How often do you visit your buoys at sea ?

Material	1m dia or less	1 to 2.2 m dia	Greater than 2.3m dia
Steel			4 years
Composite metal & plastic			
Plastic			4 years
Other (please specify)			

10. For your plastic buoys, what is the main reason for inspection / maintenance at sea ?

The plastic buoys are on a four year maintenance cycle. Each visit they are lifted, inspected, cleaned and the mooring is changed. New anodes are fitted to the central steel structure.

11. How often do you return your buoys to shore for maintenance ?

Material	1m dia or less	1 to 2.2 m dia	Greater than 2.3m dia
Steel			4 years
Composite metal & plastic			
Plastic			12 years
Other (please specify)			

12. For your plastic buoys, what is the main reason for inspection / maintenance ashore ?

The buoys have yet to be taken ashore for servicing. At the major service interval we intend to carry out a full service including full dismantling and inspection of the buoy, refurbishment/replacement of solar power supply and lighting equipment.

13. What experience do you have in modifying plastic buoys to take new navigation aids, such as AIS ?

We have not modified a plastic buoy for AIS as yet. All of our plastic buoys are fitted with satellite remote monitoring equipment.

14. Have you experienced any in service defects with plastic buoys (such as colour retention, mechanical failure, mechanical damage, mooring lug wear) ?

No

15. Please detail any experience you have of repairing or re-painting plastic buoys ?

None

16. Can you provide any cost comparisons between plastic buoys and traditional steel buoys (this may include initial cost, use of a smaller ship to support the buoy fleet, reduction in buoy maintenance facilities, reduction in overall maintenance costs)

AMSA has not purchased a steel buoy for many years and has no recent cost data. Polyethylene buoys are currently under \$40,000 AUD. They were purchased based upon the ability to use a smaller deployment vessel as the buoys are considerably lighter. They do not require refurbishment every four years like the steel buoy (blasting, thickness & crack testing and painting).

17. Are you planning to purchase more plastic buoys in the near future ?

Yes

☒

No

☐

18. What is the anticipated life of your plastic buoys ?

19. What is your disposal policy for plastic buoys at the end of their life ?

Currently a firm in Australia takes back the polyethylene materials and recycles them.

20. With your experience, what is your general opinion of the use of plastic buoys ?

AMSA is very pleased with the experience to date. The plastic buoys have performed well with no major outages experienced. Plastic buoys would be considered for any new buoys required.

21. Please provide some photographs of your plastic buoys with sizes & weights (please resize and compress any photographs before insertion):



2580kg, 5 metre focal height, 3.0 metre diameter. Overall Height 7.9 metres



1770kg, 4 metre focal height. 2.4 metre diameter. Overall height 8.9 metres



Abbot Shoal Buoy



Marsh Shoal Buoy