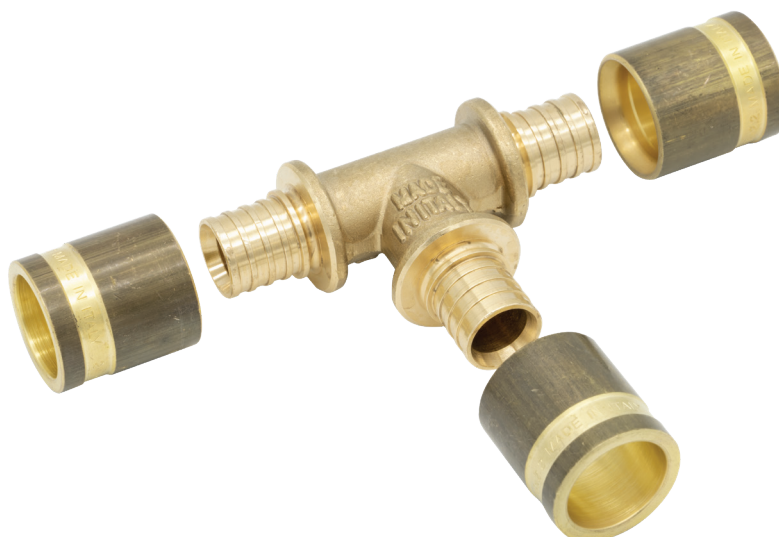


## Installation, use and maintenance instructions for axial press fittings for Pe-Xa pipe



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## 1. FUNCTION

The ICMA axial press fittings are designed for use with hot and cold water in radiator, radiant panel and in panel cooling systems. Their main function is to ensure a watertight seal with no stagnation points, removing the need for O-rings or additional seals.

These fittings have been developed for use with high thickness PE-Xa pipes (code P180), combined with the assembly kit code 81K1045BOGWXGY. The entire system has undergone a complete validation, successfully passing the tests required by the EN 15875-3 standard, class 5 (radiators with temperature range 20°C-90°C).

## 2. WARNINGS

These instructions refer exclusively to systems consisting of ICMA fittings of the 103X-104X range, ICMA P180 PE-Xa pipe (available in the diameters 16, 20, 25 and 32 mm) and assembly performed with the dedicated kit code 81K1045BOGWXGY.

These indications supplement the technical information provided in the product sheet 103X-104X, which can be consulted on the ICMA website.

It is essential to use only the equipment indicated in the official technical documentation available online.

**Attention: the assembly direction of the bushing is not reversible. The marking of the bushing must always be opposite to the direction of insertion of the pipe.**

## 3. ASSEMBLY

### 3.1. Pipe cutting

Before cutting the pipe, check that the pipe has no surface defects and that the marking provided is legible and complete in all its parts (fig.3.1).

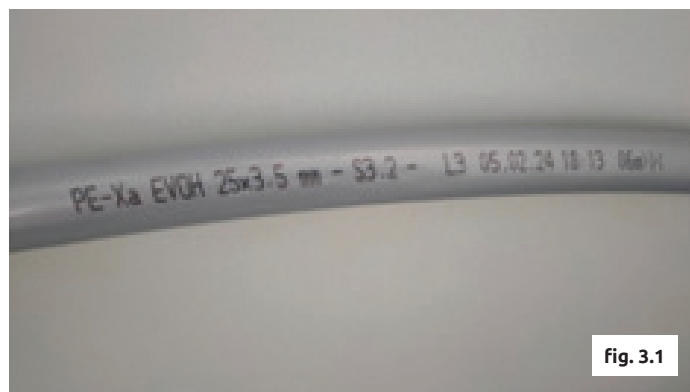


fig. 3.1

Always check that the blade of the cutter is correctly sharpened and in a perfect condition, with no dents, chips or other damage that could compromise the quality of the cut.

Make a cut perpendicular to the axis of the pipe (fig. 3.2)

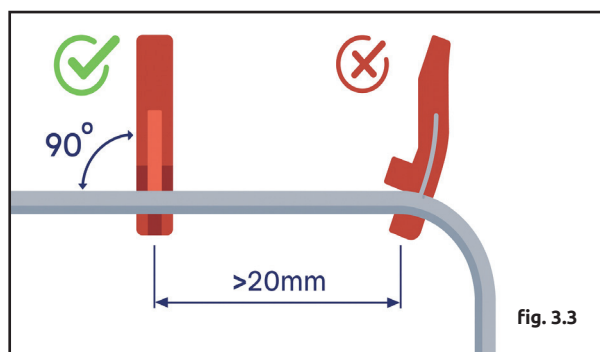


fig. 3.2

The cut must always be made on the straight part of the pipe at a minimum distance of 150mm from the previous fitting or at a minimum distance of 20mm from the end of the bending radius of the pipe (fig. 3.3).

The cut must be clean, without burrs inside or outside the pipe. If the pipe is in a coil, there are no straight pipe sections, so make a cut perpendicular to the axis of the pipe at the cutting point.

**N.B.:** If the result is not satisfactory, the incorrectly cut part of the pipe must be removed and the operation repeated.



### 3.2. Checks and assembly of the expander

Make sure that the batteries of the expander and of the presser are charged. Read the relative instruction sheet supplied with the 81K1045BOGWXGY kit.

No.4 expanders 16-20-25-32 (fig.3.4) are available. Check that the diameter of the pipe matches that of the expander head. Each expander is clearly identified by its marking.

Check that the expander is not damaged and that it screws until it stops.

Once screwed, the expander must not be unscrewed during rotation of the pipe on the expander (fig. 3.5).



fig. 3.4

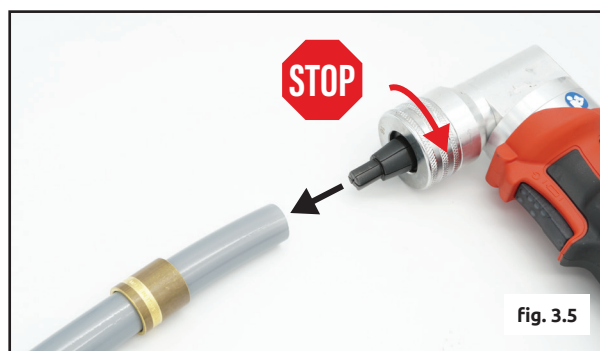


fig. 3.5

### 3.3. Insertion of the bushing

Insert the bushing on the pipe, checking that the marking is opposite to the cutting of the pipe and that between the end of the pipe and the bushing there is a distance at least double that of the bushing (expander head) in order to prevent the bushing from interfering with the expansion process (fig. 3.6 and 3.7).



fig. 3.6

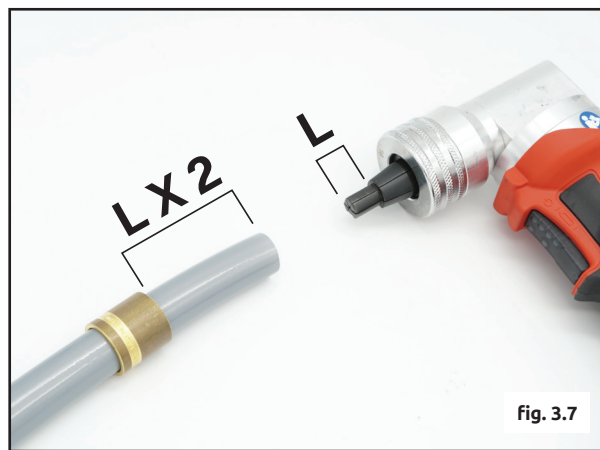


fig. 3.7

**N.B.:** The direction of the bushing is NOT reversible. The marking of the bushing must always be opposite to the direction of insertion of the pipe identified by a marking corresponding to the size of the pipe.

For correct assembly of the jaws and for everything related to the presser, please refer to the instruction sheet supplied with the 81K1045BOGWXGY kit.



fig. 3.8

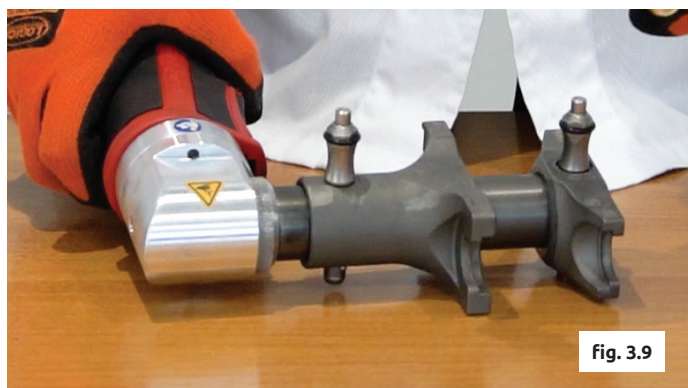


fig. 3.9

### 3.4. Pipe widening

Gradually and evenly widen the pipe by starting the automatic expansion cycle. Check that the inner part of the pipe maintains a regular cylindrical shape. To ensure optimal expansion, it is advisable to repeat the operation by rotating the pipe to different angles: for larger diameters, up to three expansions at different inclinations may be necessary.

If, at the end of the expansion, the pipe does not have a regular circular shape, proceed to cut the defective section and discard the non-conforming piece.

**The entire operation must be performed with an ambient temperature of between -10°C and +50°C.**



fig. 3.10

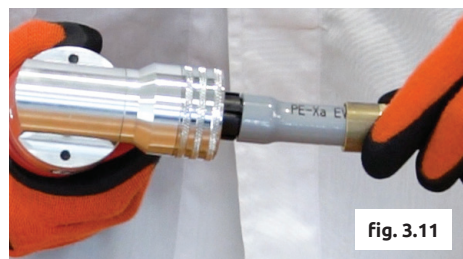


fig. 3.11



fig. 3.12

If the expansion has been performed correctly, the pipe will fit over the fitting (fig. 3.13) without any forcing.

At this stage, the nearest fitting flange should be approximately 5 mm away from the edge of the pipe.

If difficulties are encountered in insertion, the expansion operations must be repeated to ensure correct coupling.



fig. 3.13

**N.B.: The pipe has a natural return effect (memory effect). For this reason, the assembly operations between pipe and fitting must be completed quickly, before the pipe loses the initial expansion.**

### 3.5. Positioning in the jaw

Push the bushing towards the fitting. Position the elements in the jaws of the pressing machine, ensuring that the bushing and the collar of the fitting are correctly housed in abutment with the jaw (fig. 3.15)  
Always place the pipe and the bushing in abutment (fig. 3.16).

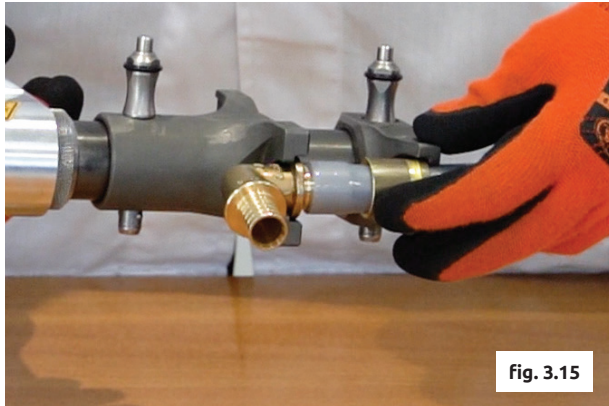


fig. 3.15

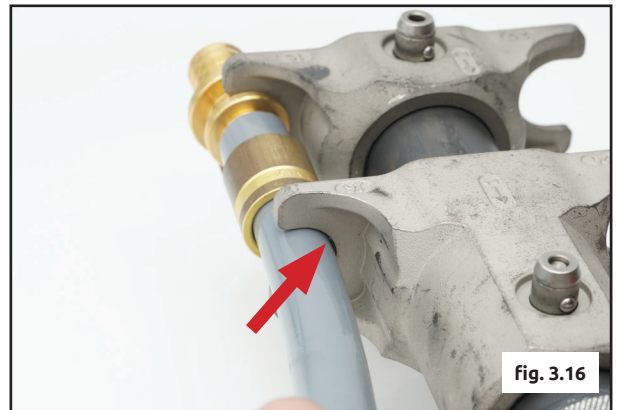


fig. 3.16

Check that the bushing and fitting are always inserted in the correct position (fig. 3.17). Perpendicular positioning allows coaxial assembly of the bushing (fig. 3.18).

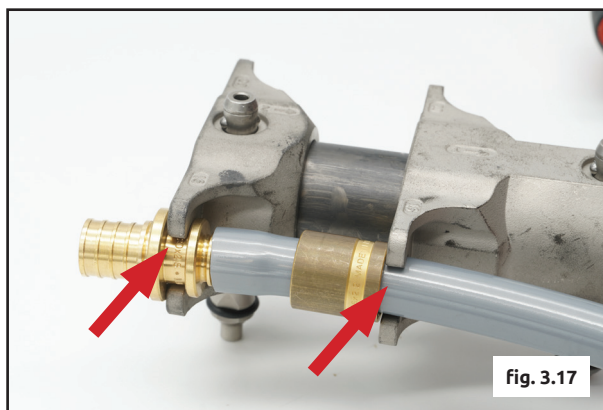


fig. 3.17

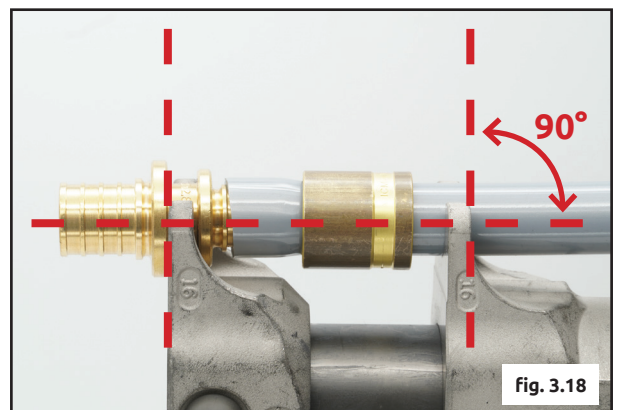


fig. 3.18

### 3.6. Pressing

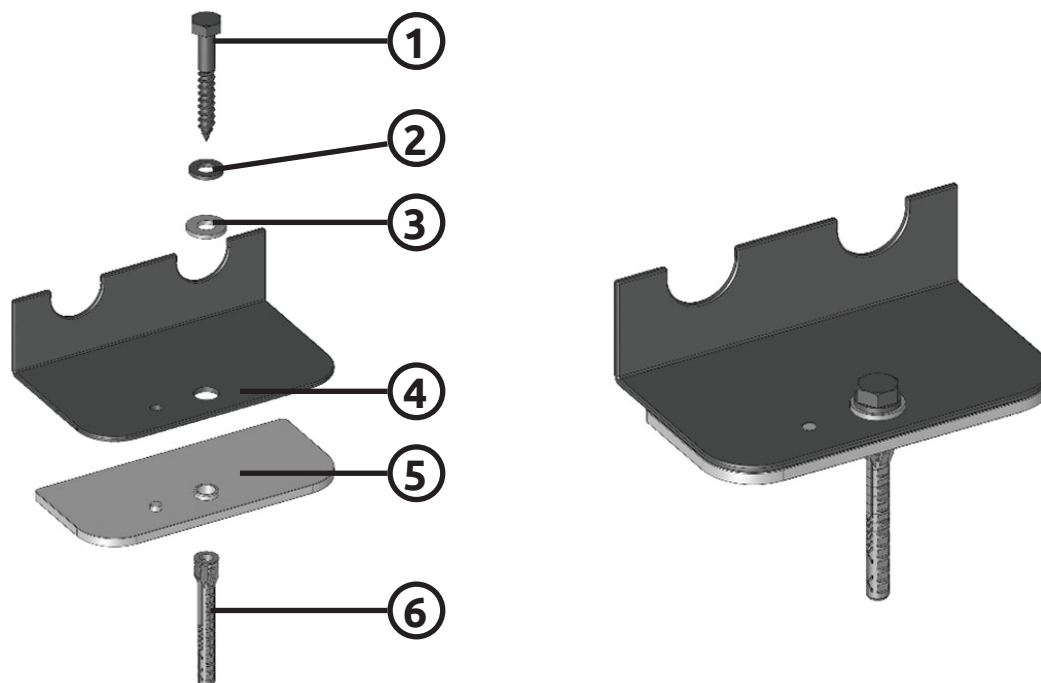
Operate the presser to wait for completion of the automatic cycle and check that the assembled bushing is in abutment with the body of the fitting (fig. 3.19).



fig. 3.19

## 4. INSTALLATION OF THE FIXING BRACKET FOR RADIATOR CONNECTION PIPES.

### 4.1. Components and materials

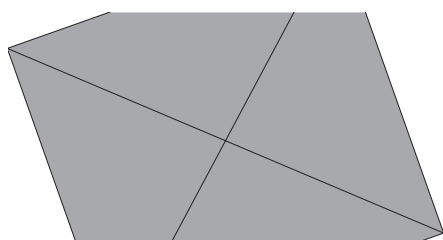


No.	Component	Material
1	Lag screw	Galvanised steel
2	Fixing washer	Galvanised iron
3	Anti-noise/anti-vibration washer	Plastic PA6
4	Bracket	Galvanised steel
5	Anti-noise/anti-vibration support	Plastic PA6
6	Plastic	Dowel

### 4.2. Benefits

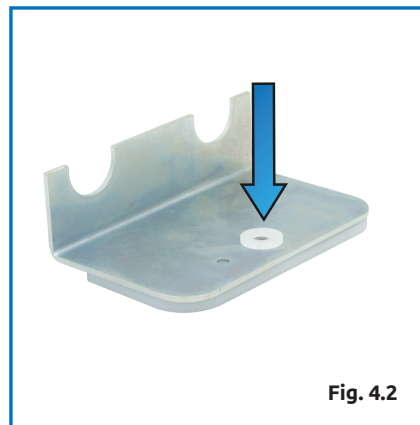
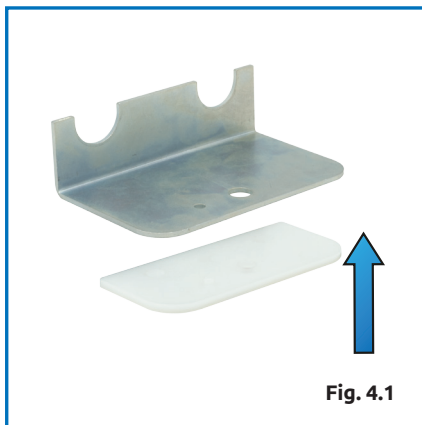
- Anti-noise
- Anti-vibration
- Stable and secure floor fastening
- 50mm fixed wheelbase

### 4.3. Bracket compatibility



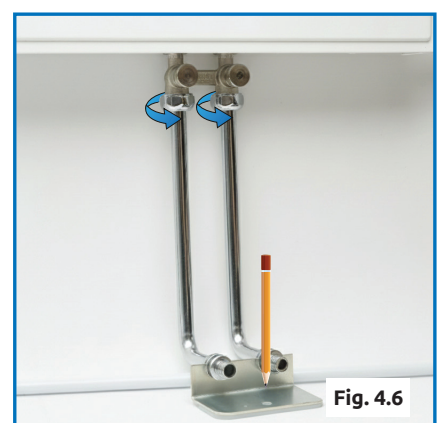
Code	Size	Thickness
851043BOGE07	16x15	2.2
851043GWGE07	20x15	2.8

## 4.4. Assembly

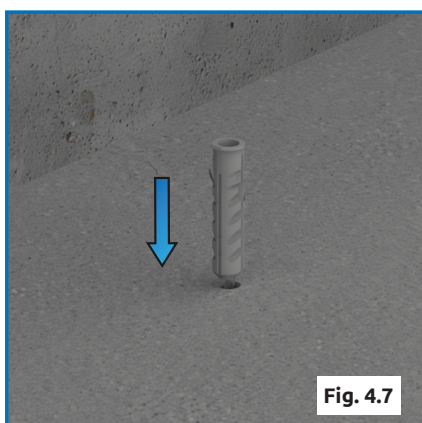


**⚠ Important: always wear protective gloves during all operations.**

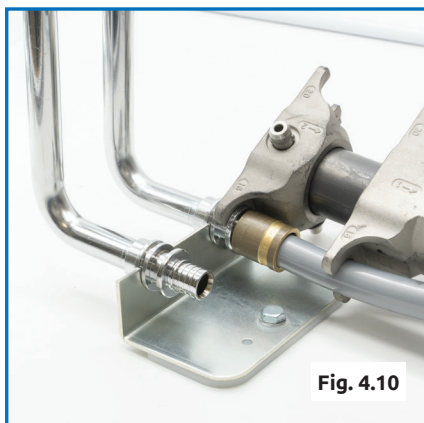
1. **Insert the anti-noise support** inside the bracket (fig.4.1).
2. **Place the anti-noise washer** in the dedicated seat on the support in order to join the three components (fig.4.2).
3. **Fit the curved fittings** for radiator item 1043 on the bracket (fig.4.3).



4. **Cut the copper pipes** to the required length, making a perfectly perpendicular cut without any burrs. Consider the portion of pipe that will enter the Eurocone seat of the H-valve (fig.4.4, fig.4.5).
5. **Insert the connection kits on the pipes** and place the radiator fittings item 1043 in the respective Eurocone seats of the H-valve.
6. **Screw the connection kits manually** and mark the point where the bracket is to be fixed with a pencil or marker (fig.4.6).




7. **Unscrew the connection kits**, remove the pipes and make the fixing hole of the floor bracket; then insert the dowel into the hole (fig. 4.7).
8. **Reposition the fittings** for radiator item 1043 in the Eurocone seats of the H-valve, manually screw the kits, then fasten the bracket by tightening the lag screw into the dowel, remembering to insert the fixing washer (fig. 4.8 and fig. 4.9).
9. **Fully tighten the** connection kits.



## 5. FAULT DETECTION/TROUBLESHOOTING AND REPAIR

MALFUNCTION	POSSIBLE CAUSES	SOLUTION
The pipe cannot be expanded.	Incorrect expansion head for the pipe.	Check that you have fitted the correct expansion head identified by the diameter of the pipe marked on it.
After expansion, it is not possible to manually insert the pipe to the pressing position near the flange of the fitting.	The pipe has not been expanded properly.	Cut the pipe approximately 10cm from the head and repeat the expansion as prescribed.
	The pipe was not properly expanded because the bushing was positioned at a distance less than the prescribed distance from the expansion area.	
The pressing jaw does not enter the relative seat.	The assembled jaw is not the correct one for the pipe.	Check that you have fitted the correct jaw identified by the diameter of the pipe marked on it.
the pressing jaw does not grip the fitting seat.	The assembled jaw is not the correct one for the pipe.	Check that you have fitted the correct jaw identified by the diameter of the pipe marked on it.

After installation, water leaks.	Pipe not properly expanded so it has not reached the correct position during pressing.	Remove the fitting and repeat the operations with a new component.
	Pipe cut not perpendicular to its axis so it has not reached the correct position during pressing.	
	Expanded pipe outside the prescribed range -10 +50°C.	
	Time between expansion and insertion/pressing too high.	
after pressing, there is a pipe that comes out of the end part. 	Bushing assembled upside down.	Remove the fitting and repeat the operations with a new component.
Possible breaks on the profile of the bushing linked to difficult pressing.	Pressing not performed correctly, difficult assembly position.	Replace and reassemble.
Where a thread is required, the counterpart is tightened with great effort.	Damaged thread.	Change the counterpart to check if the problem is related to the individual component. If the problem persists and is generalised, please contact the sales department.
If a thread is required, loss from the threaded coupling area.	Teflon has not been applied sufficiently or has been applied poorly.	Remove and reapply the Teflon.
	Component not fully screwed.	Try to screw again.
For the "swivel unit" component, during screwing the swivel detaches from the retaining area.	Defective component.	Replace the component.

For the "swivel unit" component, water leaks after installation.	There is no gasket.	Check for the presence of the gasket.
		Worn/damaged gasket.
		Disassemble and check the condition of the gasket, replace with a new one if necessary.
For straight and T welded fittings, leakage from the welding area.	Damaged weld.	Check if the leak is actually attributable to the welding area, if confirmed replace the component.

## 6. TIGHTENING

For the axial coupling with swivel item 1041 the recommended closing torque is 15 Nm for the AD and AE versions, while it is 20 Nm for the AF version.

## 7. DISASSEMBLY, DEACTIVATION AND SCRAPPING

At the end of the life of the fittings, before disposing of them permanently, think about whether they can be used for other purposes.

Demolition and disposal of the fittings are the sole responsibility of the owner who must act in compliance with the laws in force in their country regarding safety, respect and protection of the environment. At the end of its useful life, the product must not be disposed of together with municipal waste. It can be delivered to the appropriate separate collection centres set up by the municipal administrations or to specific retailers that provide this service.

Disposing of the product in a differentiated manner prevents possible negative consequences for the environment and health, resulting from its inadequate disposal, and facilitates recovery of the materials of which it is composed in order to obtain important saving of energy and resources.

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