

# Deliverable DA7

*Recommendations on standards for recycled plastics resins/products for adoption, to inform the pre-standardization process led by the Israeli Standardization Institute and the Ministry of Economy.*

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# 1. CEN & ISO standards recommended for adoption in Israel, by category

The following tables list CEN and ISO standards which were found suitable to, and are recommended for, adoption as Israeli standards. They were selected based on the current situation of the plastics recycling and plastics packaging industries in Israel, and on the state of local legislation and regulation in this field.

Those standards are to be further discussed and evaluated by the relevant standardization committee of the Israeli Standards Institute (SII).

## 2.1 Specifications for recycled plastics materials

### Key product standards for recyclates of various materials.

Standard number	Latest version	Title of standard	Main content / Comments	Adopted or referenced in Israeli Standards
EN 15343	2007	Plastics — Recycled plastics — Plastics recycling traceability and assessment of conformity and recycled content	Data and documentation required for material traceability.	
EN 15347	2007	Plastics — Recycled plastics — Characterisation of plastics wastes	Mandatory information & optional general characteristics of waste, reported for each batch, to be supplied to the purchaser.	
EN 15342	2007	Plastics — Recycled Plastics — Characterization of polystyrene (PS) recyclates	Mandatory & optional material specific characteristics to be reported, for each batch, by the supplier, together with material composition, melt filtration details and QC data for all process stages.	
EN 15344	2007	Plastics — Recycled plastics — Characterization of polyethylene (PE) recyclates	Details of test methods are in annexes.	
EN 15345	2007	Plastics — Recycled plastics — Plastics recyclate characterisation of (PP) recyclates		
EN 15346	2014	Plastics — Recycled plastics — Characterisation of poly(vinyl chloride) (PVC) recyclates		
ISO 12418-2	2012	Plastics — Post-consumer poly(ethylene terephthalate) (PET) bottle recyclates — Part 2: Preparation of test specimens and determination of properties	List of required & optional characteristics with their test methods. Very similar to EN 15348.	
ISO 16103	2005	Packaging -- Transport packaging for dangerous goods -- Recycled plastics material	Requirements and test methods for material acceptability for this specific application.	
ISO 18263-2	2015	Plastics — Mixtures of polypropylene (PP) and polyethylene (PE) recyclate derived from PP and PE used for flexible and rigid consumer packaging — Part 2: Preparation of test specimens and determination of properties	List of required & optional characteristics with their test methods. Interesting Annexes on PE/PP mix properties.	
ISO 20819-1	2020	Plastics — Wood-plastic recycled composites (WPRC) — Part 1: Specification	Wood/plastic proportion of types of raw materials to be used in WPRC. Test methods for volatile and toxic materials. List of acceptable woody and plastics materials.	

## 2.2 Recycled material in Plastics Pipes production

Standards of plastics pipes for non-pressure applications that permit the use of recycled material.

Standard number	Latest version	Title of standard	Main content / Comments	Adopted or referenced in Israeli Standards
CEN/TS 14541	2013	Plastics pipes and fittings — Characteristics for utilisation of nonvirgin PVC-U, PP and PE materials	Allows use of 100% external recycled material with agreed specifications.	
EN 1401-1	2019	Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U) — Specifications for pipes, fittings and the system	Allows use of 20% external recycled material with agreed specifications.	Referenced in SI 13476-2
EN 1451-1	2017	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polypropylene (PP) — Specifications for pipes, fittings and the system	Allows use of 100% external recycled material from PP pipes/fittings with agreed specifications.	
EN 1519-1	2019	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polyethylene (PE) — Requirements for pipes, fittings and the system	Allows use of 100% external recycled material from PE pipes/fittings with agreed specifications.	Already adopted, as SI 1519-1
EN 1852-1	2018	Plastics piping systems for non-pressure underground drainage and sewerage — Polypropylene (PP) — Specifications for pipes, fittings and the system	Allows use of 100% external recycled material from PP pipes/fittings with agreed specifications.	Referenced in SI 13476-2
EN 12200-1	2016	Plastics rainwater piping systems for above ground external use — Unplasticized poly(vinyl chloride) (PVC-U) — Part 2: Guidance for the assessment of conformity	Allows use of 100% external recycled material in inner layer of multilayer pipe.	
EN 12666-1	2005	Plastics piping systems for non-pressure underground drainage and sewerage — Polyethylene (PE) — Specifications for pipes, fittings and the system	Allows use of 100% external recycled material from PE pipes/fittings with agreed specifications.	

Standard number	Latest version	Title of standard	Main content / Comments	Adopted or referenced in Israeli Standards
EN 13476-2	2018	Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A	Allows use of 100% external recycled PVC with agreed specifications. Allows use of 100% external recycled material from PE or PP pipes/fittings with agreed specifications.	Already adopted, as SI 13476-2
EN 13476-3	2018	Plastics piping systems for non-pressure underground drainage and sewerage – Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) – Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B	Allows use of 100% external recycled material from PVC, PE or PP pipes/fittings with agreed specifications.	Already adopted, as SI 13476-3
EN 13598-2	2020	Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 2: Specifications for manholes and inspection chambers	Allows use of 100% external recycled material with agreed specifications.	Already adopted, as SI 13598-2
EN 17152-1	2019	Plastics piping systems for non-pressure underground conveyance and storage of non-potable water — Boxes used for infiltration, attenuation and storage systems — Specifications for storm water boxes made of PP and PVC-U	Allows use of 100% external recycled material.	
EN 50626-2	2020	Conduit systems buried underground for the protection and management of insulated electrical cables or communication cables — Part 2: Polyethylene (PE), Polypropylene (PP) or Unplasticized poly(vinyl chloride) (PVC-U) conduit systems – Requirements for solid wall conduits, fittings and the system used in special applications	Allows 100% external recycled material with agreed specifications.	
ISO 13272	2011	Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP), polypropylene with mineral modifiers (PP-MD) and polyethylene (PE) — Specifications for manholes and inspection chambers in traffic areas and underground installations	Allows use of 100% external recycled material conforming to EN 14541.	Similar to EN 13598-2
ISO 15398	2012	Specifications for thermoplastics covers and frames for manholes and inspection chambers used in non-traffic area	Allows use of 100% external recycled material conforming to EN 14541.	

## 2.3 Recycled material in Plastics Film production

This is the only standard for non-pipe product that permits the use of recycled material.

Standard number	Latest version	Title of standard	Main content / Comments	Adopted or referenced in Israeli Standards
ISO 13636	2012	Plastics — Film and sheeting — Non-oriented poly(ethylene terephthalate) (PET) sheets	Allows use of recycled material in PET films and sheets.	

## 2.4 Standards for recyclable plastics products

Product specifications; marking; environmental claims.

Standard number	Latest version	Title of standard	Main content / Comments	Adopted or referenced in Israeli Standards
EN 13592	2017	Plastics sacks for household waste collection - Types, requirements and test methods	Specifications for household waste bags	
EN 13655	2018	Plastics — Thermoplastic mulch films recoverable after use, for use in agriculture and horticulture	Specifications for mulch film, a product short-term use which is recoverable and recyclable, with removal instructions.	2002 edition adopted by SI 821-2
ISO 11469	2016	Plastics — Generic identification and marking plastics products	Marking products with polymer symbols and with REC for recycle.	
ISO 14021	2016	Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling)	Definitions of, and verification methods for, "Recyclable" and "Recycled Content" claims, as well as other environmental claims for products.	Referenced by SI 5281

## 3. Consultations with industry

Based on the findings and assessments in the A.6 report, the author made a series of consultations with key persons in the plastics recycling industry and the plastics packaging industry in Israel, as well as with persons from the Manufacturers Association of Israel and the Israeli Standards Institute (SII), discussing the necessity and priorities of adopting and preparing Israeli standards in the field of recycled plastics.

In addition, a request for establishing a new standardization committee on Recycled Plastics has been made to the SII.

## 4. Need to promote Israeli standardization on recycled plastics

As already reported in Task A.6, recycled plastics have been given very little attention in Israeli standards so far. In the Israeli standardization system most of the demand for preparation of new standards, or for revision of old ones, come from the production industry or from potential users.

Currently it appears that neither plastics recyclers nor recycled plastics users in the Israeli industry are mindful about the necessity and importance of having standardization in this field. In order to change this situation and create an obligation to follow and comply with standards we need better, more specific local **legislation** and **regulation** related to plastics recycling, which should be developed and enforced by the Israeli Ministry of Environmental Protection.

## 5. Contribution of Israeli industry to standardization on recycled plastics

Before closing this report, it is worth mentioning that a new test method for evaluating contaminants in recycled plastics, that has actually been developed by an Israeli company, has recently been submitted, discussed, and approved by CEN as a European standard - CEN/TS 17627.



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