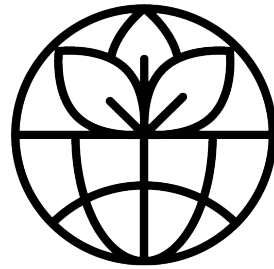


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# Sustainability Initiatives



Green Manufacturing and Logistics



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# Agenda

1 Plastic-free packaging

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2 Plastics recycling

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3 Eco-friendly paints

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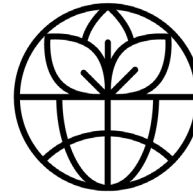
4 Green manufacturing

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5 Remanufacturing: *Like New* program

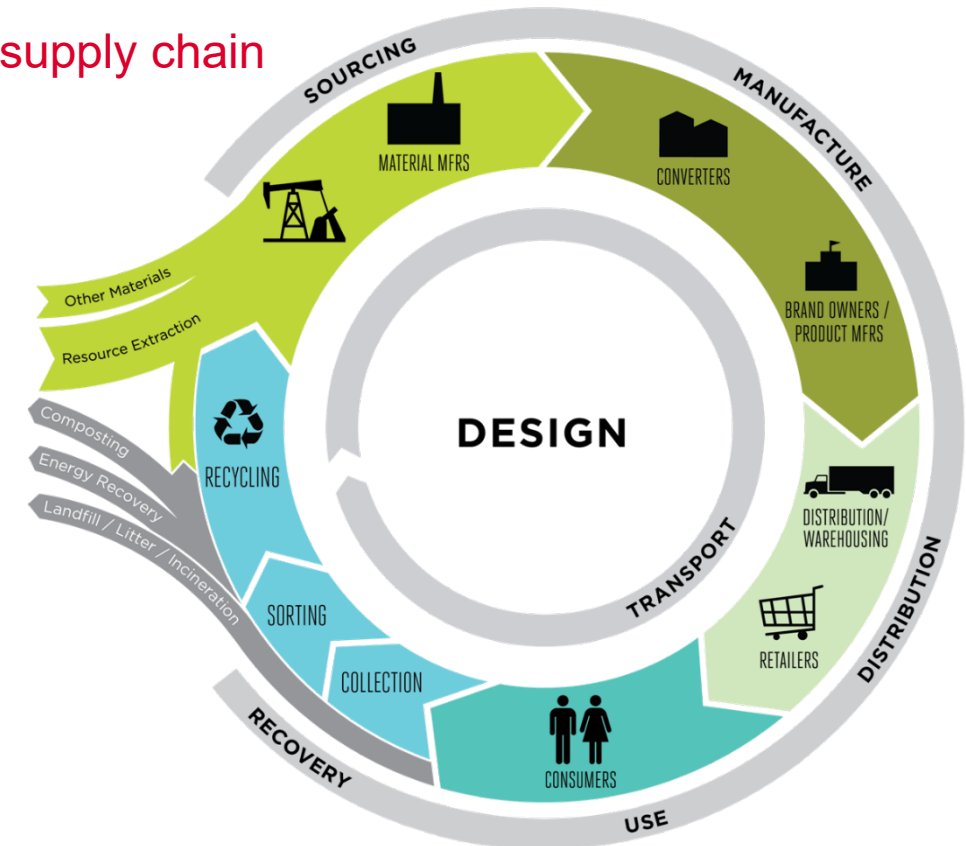
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# UEI Sustainability program



UEI supports customers with sustainable initiatives throughout the supply chain

- **Green by Design:** UEI’s R&D continually works towards more eco-friendly use of materials, including water-based paints and options for reuse of plastics.
- **ZeroPlastic:** UEI can deliver SUP-free packaging (free from Single-Use Plastics) and reduces use of plastics throughout the supply chain.
- **Green initiatives:** UEI offers to remanufacture remotes returned to operators by consumers: the **Like New** program. For Comcast, UEI has re-built 6.8 M XR11 and XR15 remotes since 2017.

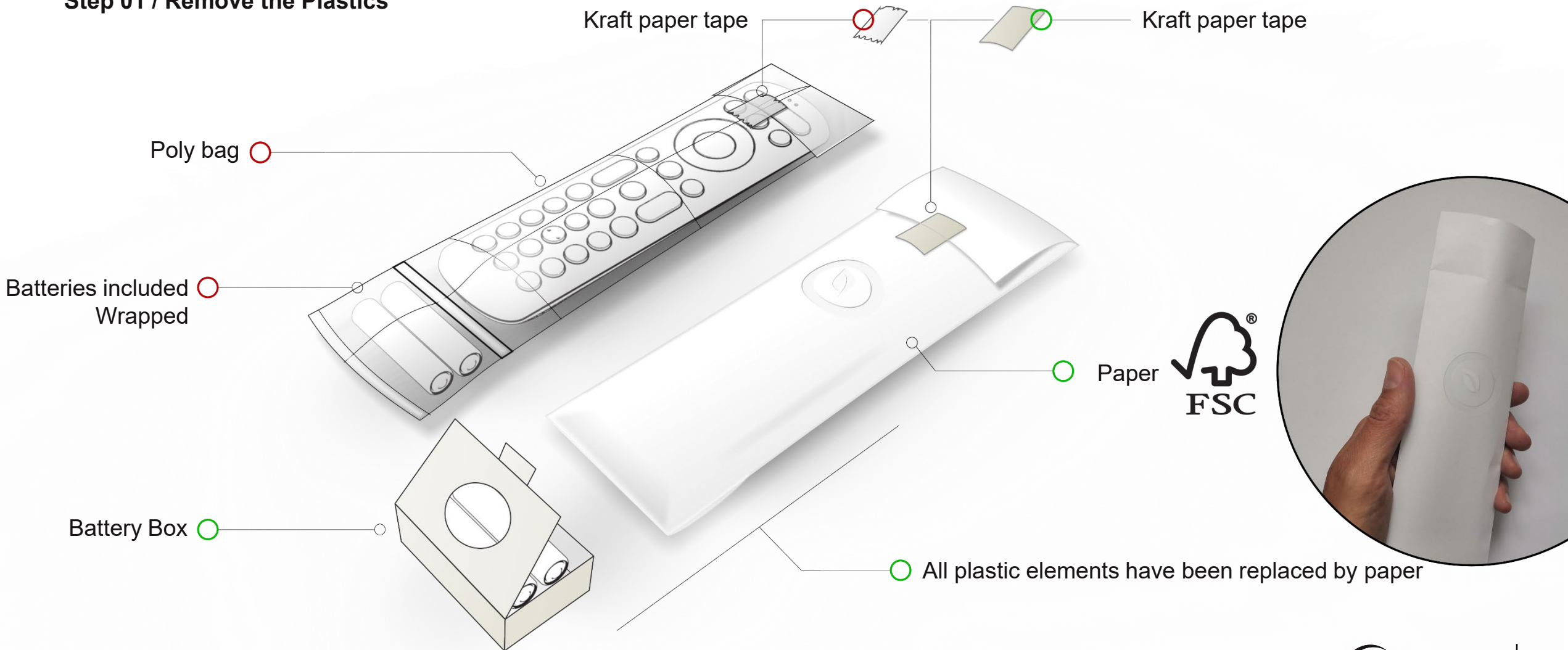


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# Plastic-Free Packaging

# Protecting the remote / The Bag

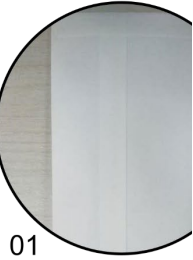
## Step 01 / Remove the Plastics



# Protecting the remote / The Bag - Research

## Step 01 / Remove the Plastics

	Performance (++) / (+)	Perception (Green / Polluting)	Sustainability (++) / (+ / -)
Poly bag (PET)	++	Polluting	-
(01) White coated Paper bag	+	Green	++
(02) Bamboo bag (Bamboo fibre T0.12mm)	+	Green	++
(03) PLA + PBAT bag	+	Green	+
(04) Tea bag 26 gsm, 70% wood pulp, 30% food grade PP fibre	+	Green	+
Notes	Some dust and additional minor appearance imperfections to the product during shipping		Tea bag contains PP and therefore will not completely break down in a home composter, PLA_PBAT requires unique recyclable



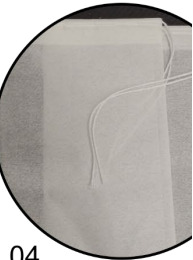
01



02



03



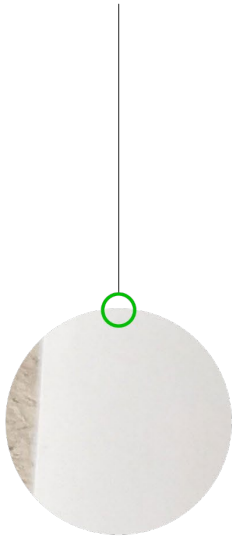
04

# Protecting the remote / Pull Tab Research

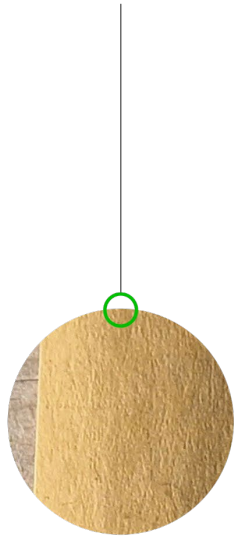
## Step 01 / Remove the Plastics



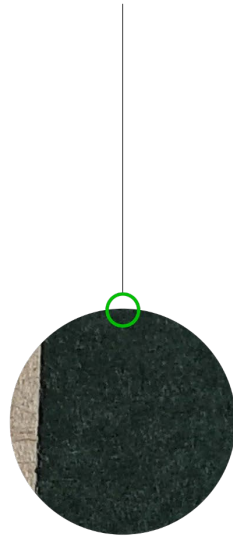
Paper



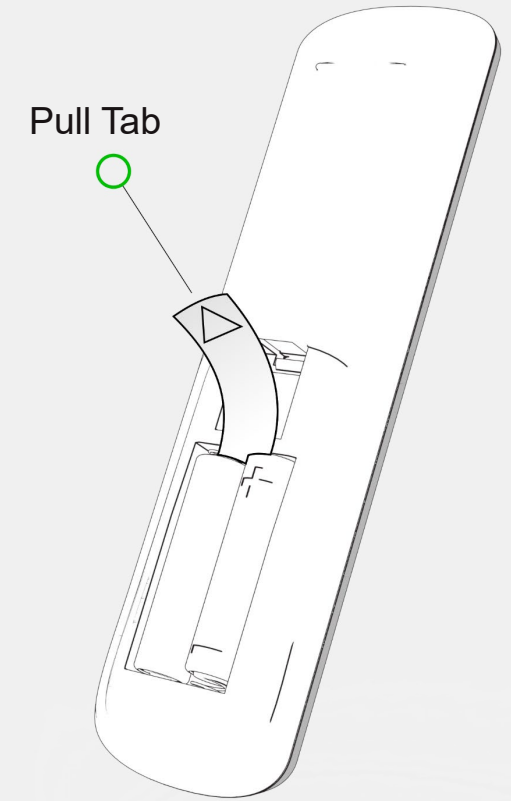
Kraft Paper



Vulcanized Fish Fibre Paper



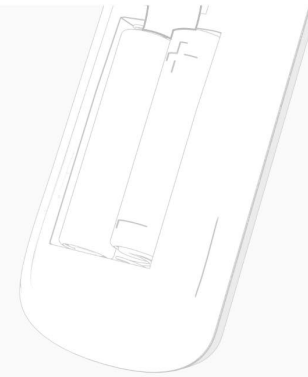
PLA



# Protecting the remote / Pull Tab Research

## Step 01 / Remove the Plastics

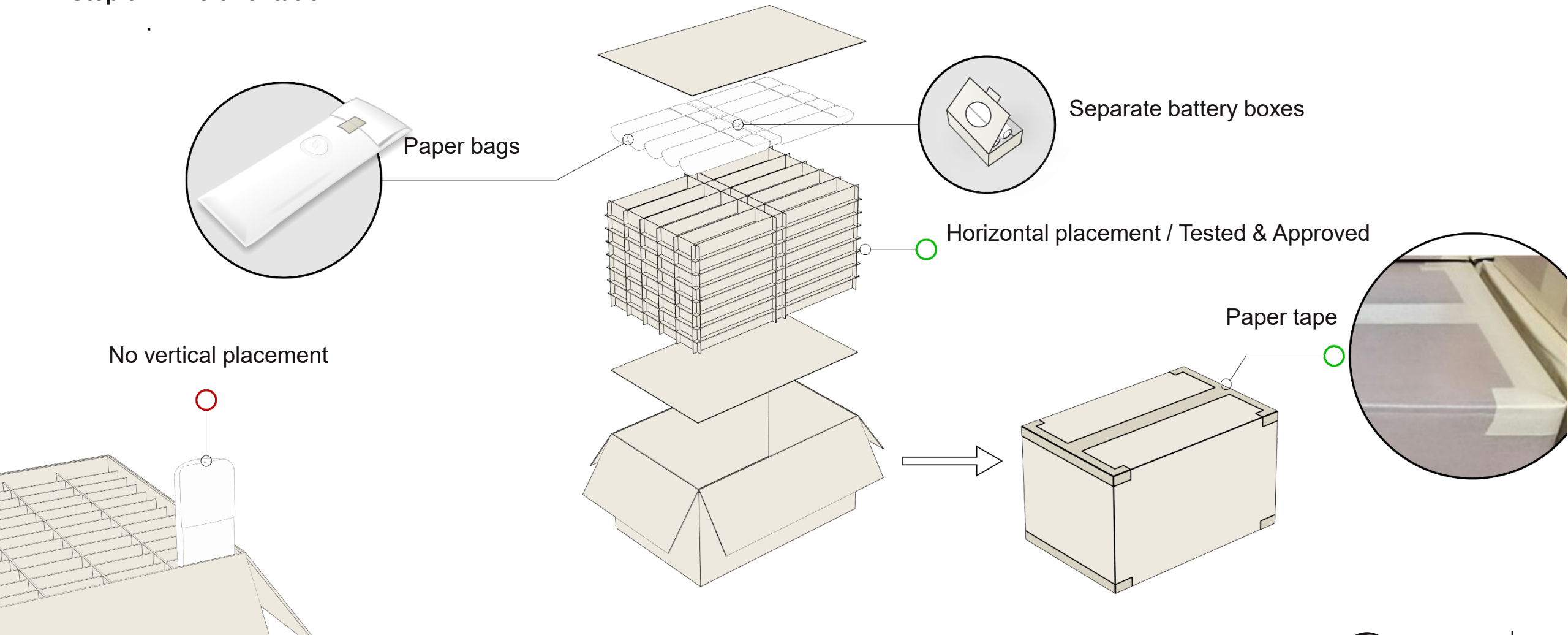
	Performance at room temperature	Performance in temperature & humidity testing	Electrical isolation
White 100 gsm coated paper	Low tensile strength	Humidity is an issue	Performance risk in temp. testing
Kraft paper	OK	Humidity is an issue	Performance risk in temp. testing
Vulcanized fish fibre paper	OK	Humidity is an issue	Performance risk in temp. testing
PLA Biodegradable sheet material	Research in progress	Research in progress	Research in progress
PET	OK	OK	OK





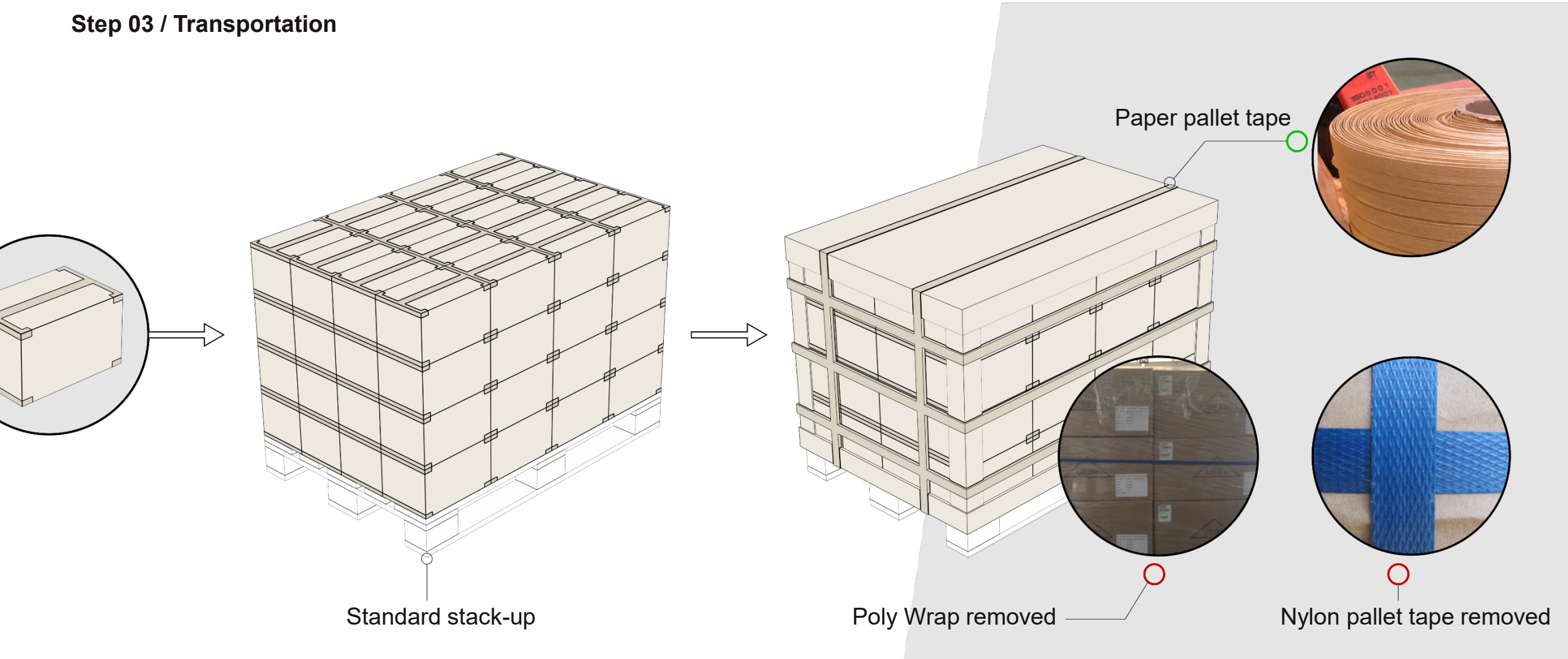
# Protecting the remote / The Box

## Step 02 / The orientation



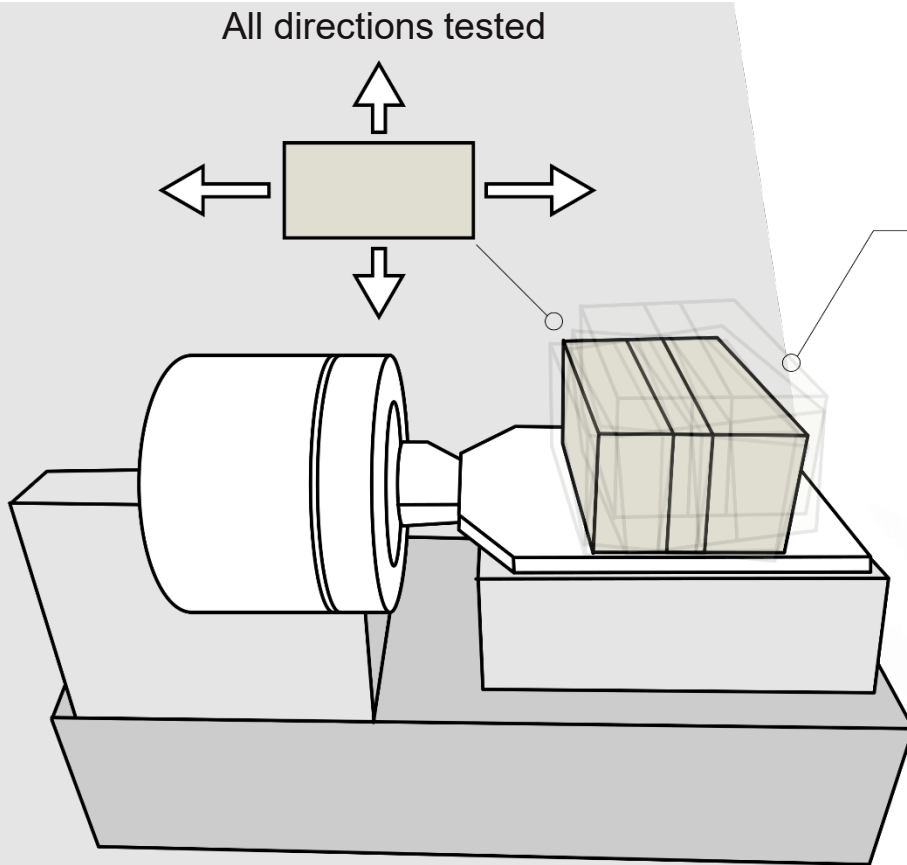
# Protecting the remote / The Pallets

## Step 03 / Transportation

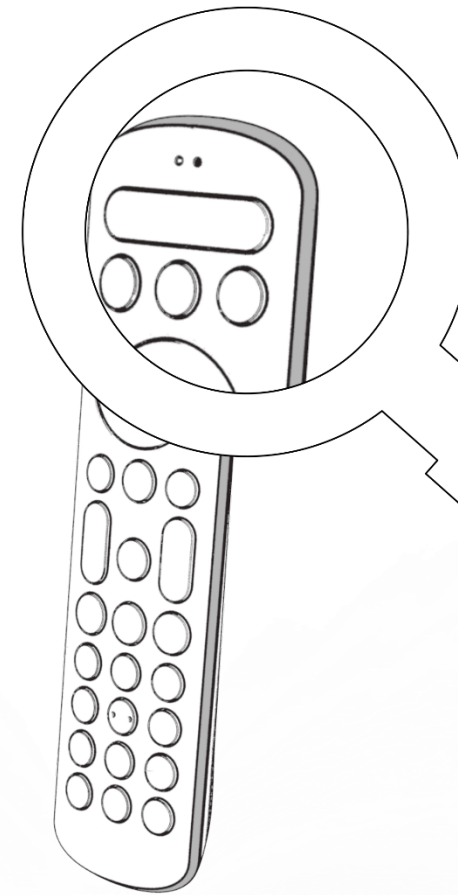


# Testing & Criteria

## Step 04 / Testing



ISTA Shipping test standards are followed by UEI for all products

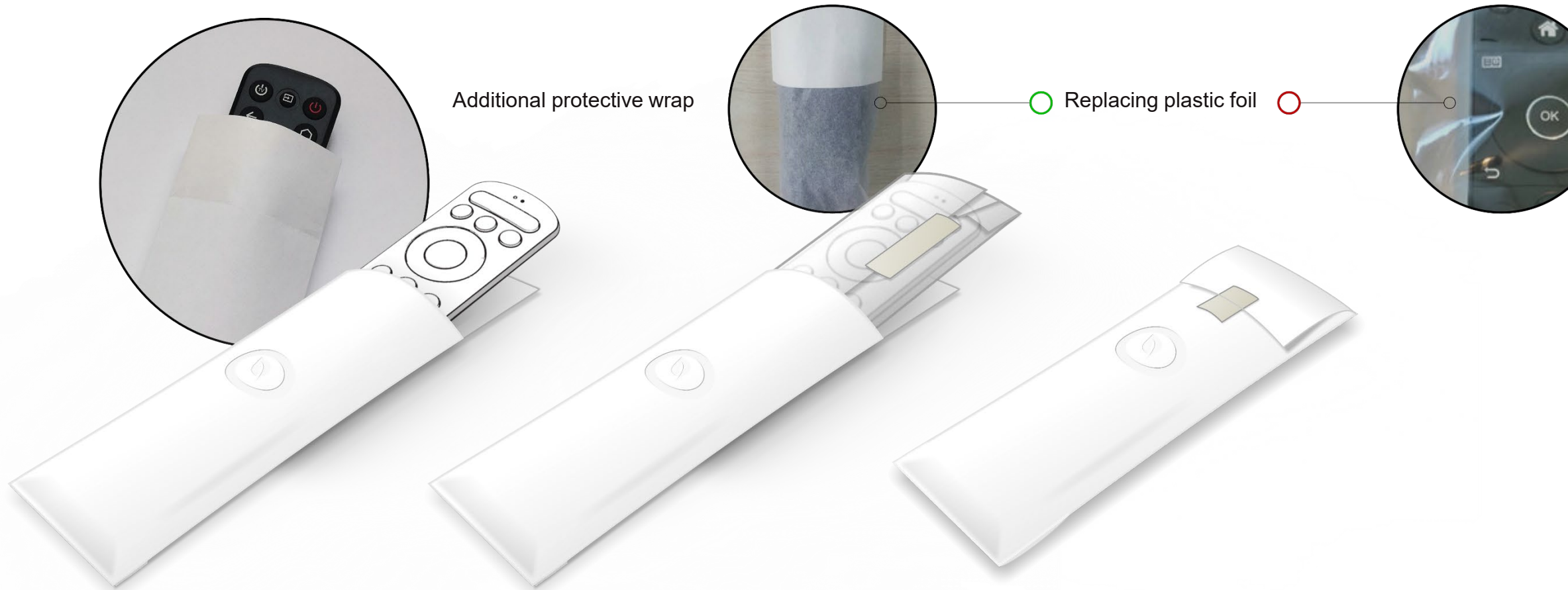


Test acceptance criteria need to be considered

TEST CRITERIA	
✓	
✓	
✓	
✓	

# Considerations / Protective Wrap

## Packaging / Alternatives



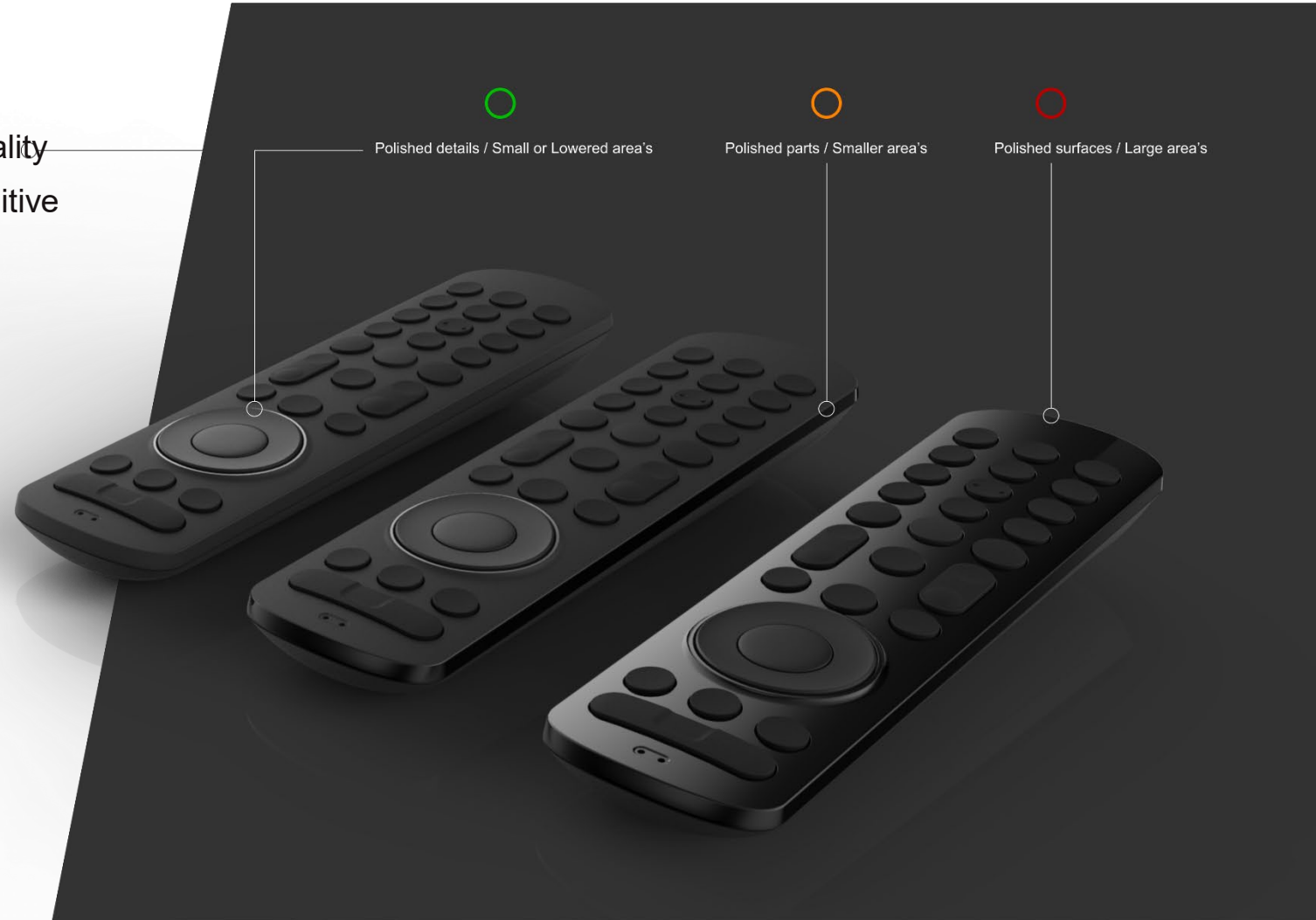
# Considerations / Design & Finishes

## Texture considerations

Textures will impact the perceived quality  
Polished areas are more sensitive

- Increased texture coarseness will help to maintain appearance

Example / VDI3400 29-32

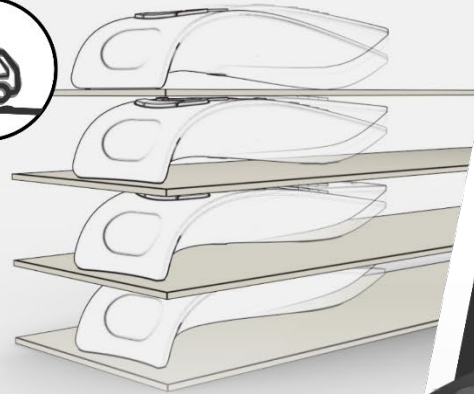


# Considerations / Design & Finishes

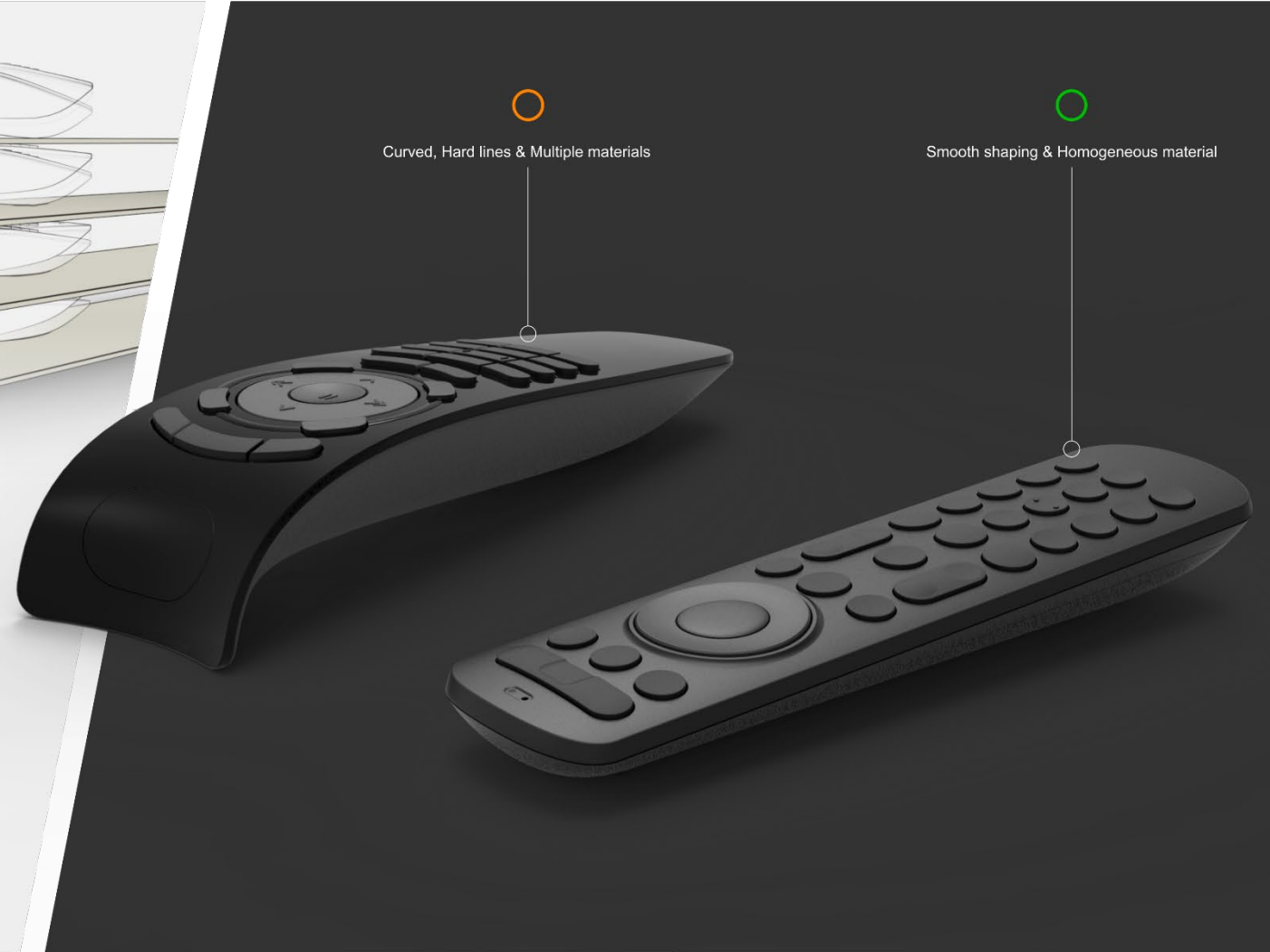
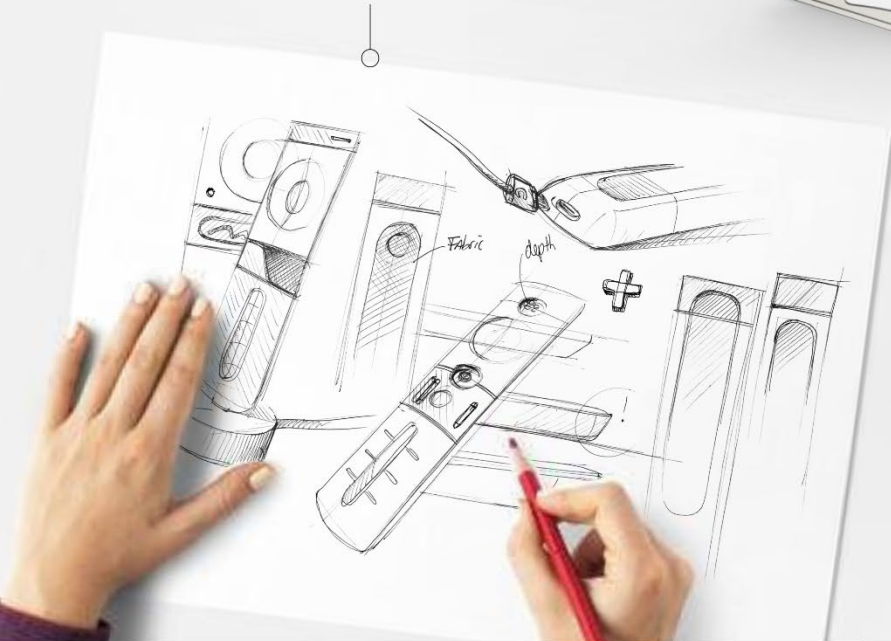
## Design / Alternatives



Transportation impact



Design can improve feasibility

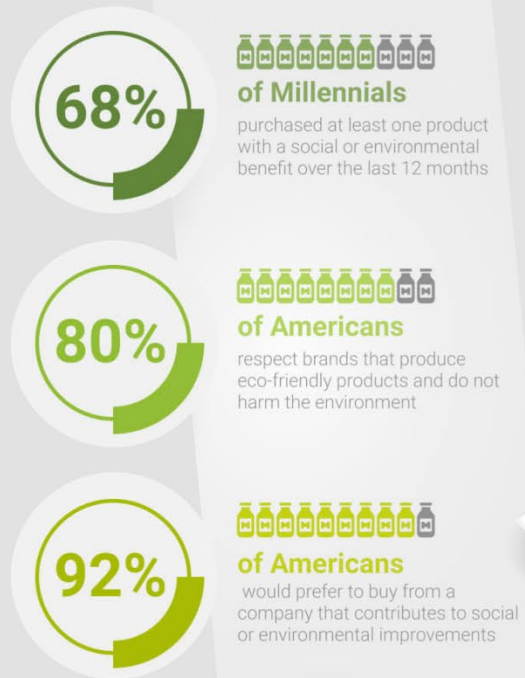


Curved, Hard lines & Multiple materials

Smooth shaping & Homogeneous material

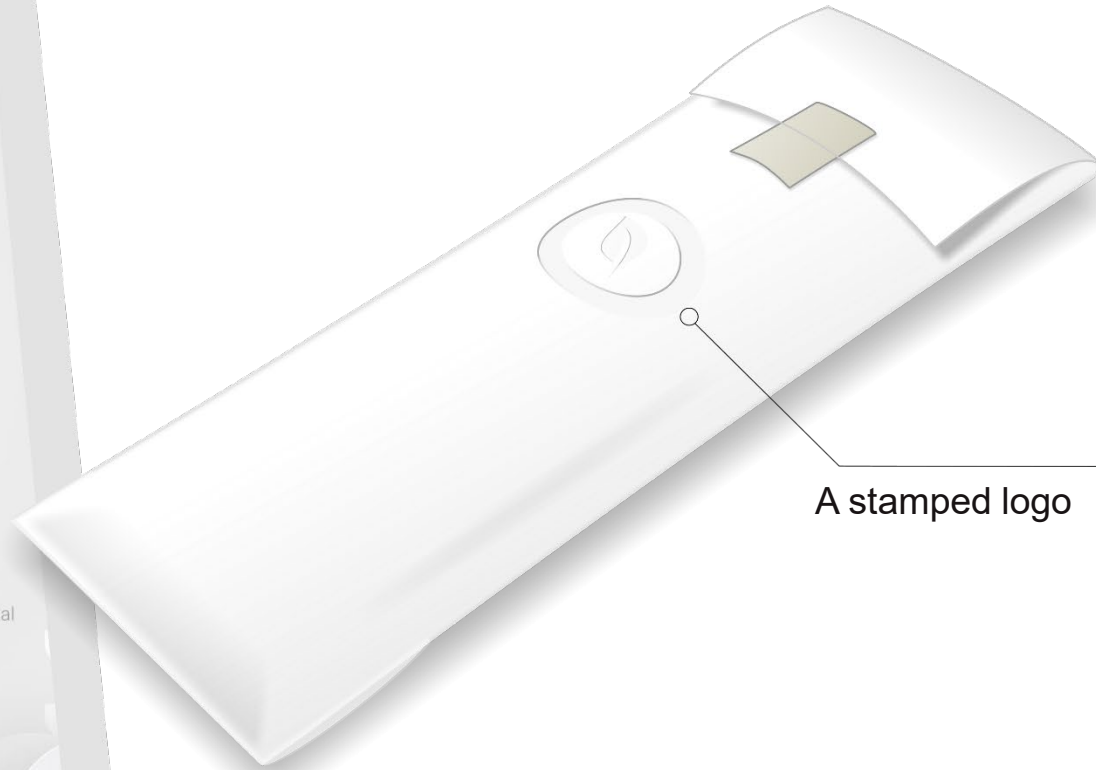
# User satisfaction / A better World

## Perception



www.belvg.com

A new Out-of-the-Box experience - A powerful message will win



A stamped logo



IN PRACTICE

## Create a better living

The amount of PET (protective film & poly bag) used in 1 million units would cover 37,500 - 40,000 m<sup>2</sup> - **Enough to cover more than 5 football (soccer) fields.**

A large landfill of waste, including plastic bags, cardboard, and other debris, with a yellow bulldozer in the background. The sky is overcast and hazy.

Together we can save  
5,8 km<sup>2</sup> or 725 soccer fields



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# Plastics Recycling



# Recycled plastics



PCR ABS



PCR HIPS



OCEAN PET

Specifications			
Availability			
Trial injection molding			
Product testing			
Mass trials			

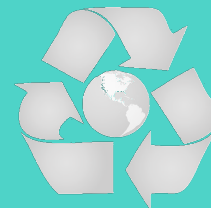
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# *Like New* Re-manufacturing

## RECYCLING OF REMOTE CONTROLS

# Like New program

- As of 2016, UEM has become our first site for re-manufacturing of remote controls that returned from the field due to churn with pay-TV service providers
- As lead development partner for many of the original RCUs, UEI was the ideal re-manufacturing partner to recycle field returns and create economic and ecologic value
- Expertise in efficient disassembly, inspection and cleaning, updating software, re-assembly and testing of RF and voice devices
- 100% original quality with full warranty on workmanship, cosmetics and functional performance
- As of 2021, UEM has processed over 15 million units of returned remotes for major U.S. service providers



15 Million “Like News”

## RECYCLING OF REMOTE CONTROLS

# Like New program

Over 95% of the materials in used remote controls are recycled or reused

- ABS is ground and used in recycled molded plastics
- Silicon is ground and reused in products like playground mats
- PCBA is cleaned, tested, updated, and reused in new remotes
- Provides a “green” eco-friendly message/image

Purchase “Like New remotes” at a discounted price

- Reduce the ASP for remotes
- Like-New remotes carry a full warranty for wear and operation



Reducing Carbon Footprint



Saving Money

**LIKE NEW**

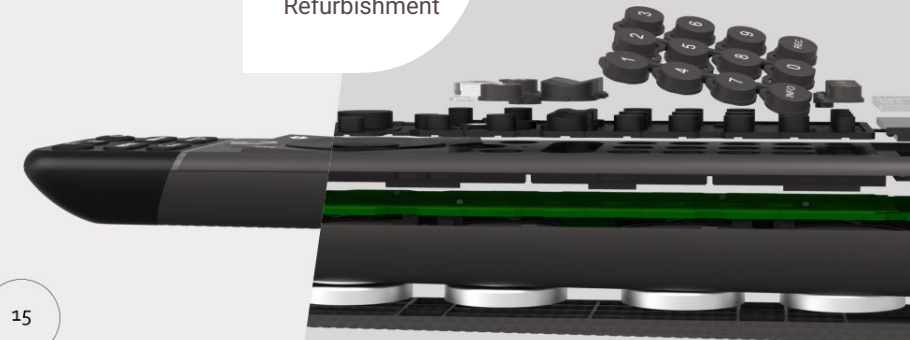
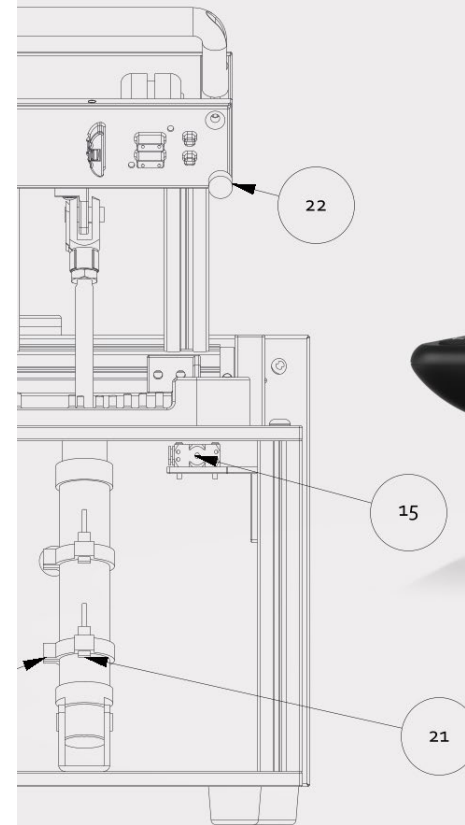


UEI sells the Like-New remotes back to customer at a reduced price. These warrantied remotes are used by customer in new installations

## SUSTAINABILITY – END OF LIFE RECYCLING

# Design for easy recycling or refurbishment

- Refurbishment centers can easily open appropriately designed UEI remotes as an easy first step in their clean and screen process.
- Since 2016 refurbishment centers have been purchasing UEI plastics for use in refurbished remote controls.
- Spare part purchasing quantities vary from part to part, showing that our patented technology is already helping customers reuse post consumer parts in refurbished products.
- This maximizes the length of time until UEI's customer parts become waste.
- Since 2016 UEI has been supplying customers with fixtures that aid both the end-of-life recycling and refurbishment process.



UEI's patented design for disassembly allows our customer to easily separate our remote control aiding simple EOL recycling.

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Thank you!

