BIOTURF - DEVELOPMENT OF A SUSTAINABLE BIO-BASED ARTIFICIAL TURF SYSTEM WITH IMPROVED RECYCLING ABILITIES

D. HANUSCHIK[1], C. POST[1], U. BERGHAUS[2], F. PURSCHE[3], R. KRAUSE[3], T. RÜDIGER[1], S. GELDERBLOM[1], B. ASLAN[1]

1 TFI - INSTITUT FÜR BODENSYSTEME AN DER RWTH AACHEN E.V., AACHEN, GERMANY

2 MORTON EXTRUSIONSTECHNIK GMBH, ABTSTEINACH, GERMANY

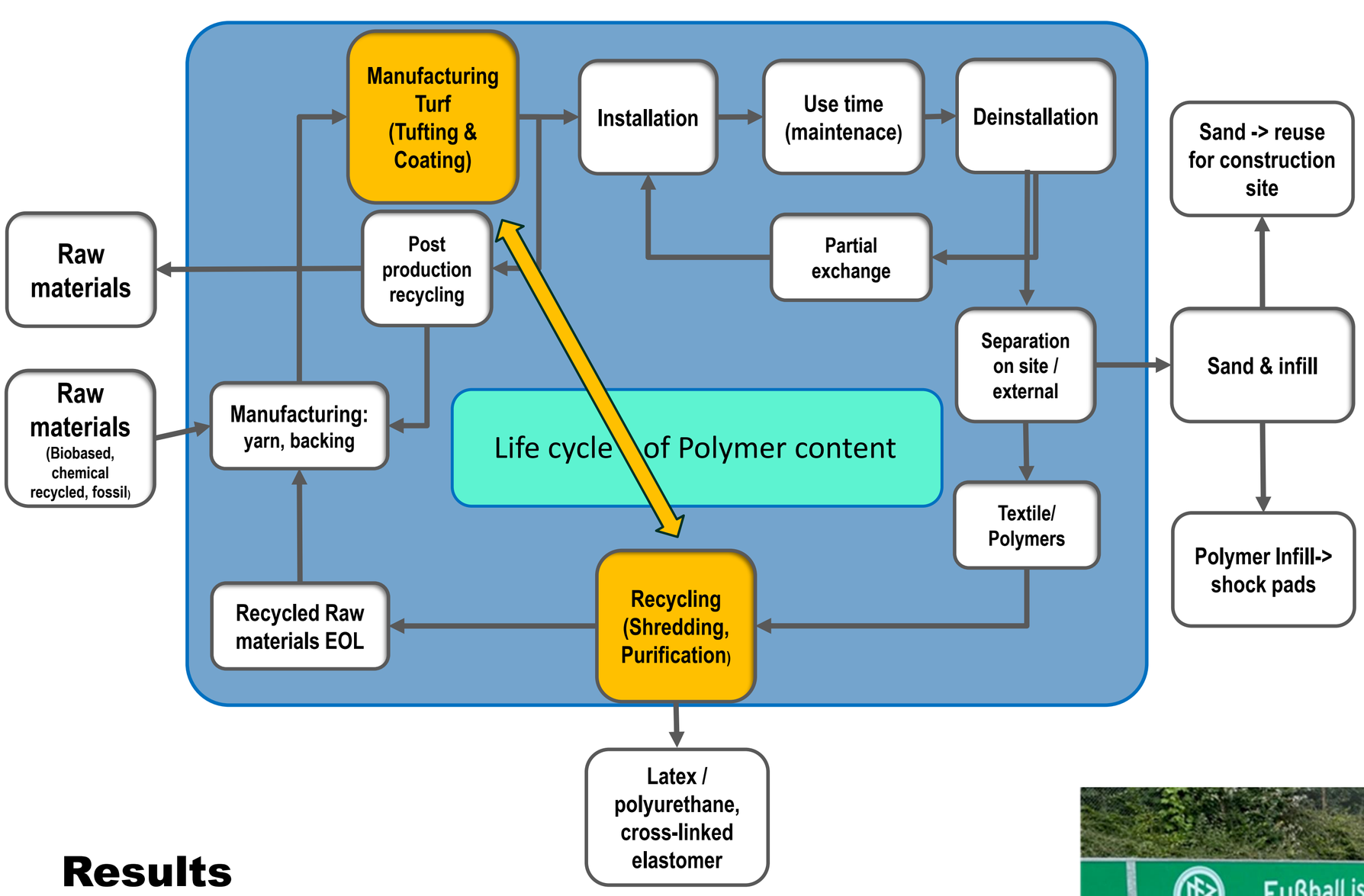
3 ITA - INSTITUT FÜR TEXTILTECHNIK, RWTH AACHEN UNIVERSITY, GERMANY

State of the art

- After tufting the textile, the back of the primary backing is coated with latex or polyurethan to fix the pile yarn
- Polyurethan and latex ensure stability but avoid high-quality material recycling regarding a closed-loop economy

New Approach

- New process of fusion-bonding allows pile binding without additional material
- Substitution of plastic infill by texturized yarns
- Mono-material construction without infill will overcome this obstacle enabling true reuse of the material employed.



Implementation

better recycling abilities imply adapted stategies in design and manufacturing 8-10 years before recycling time:

1. Construction of recyclable mono-material turf
2. Substitution of microplastic generating infill with textured yarn
3. Pile yarn fixation process without latex or polyurethan via fusionbonding
4. Adaption of tufting process to guarantee dimensional stability

Results

In addition to raw material savings, the following benefits are achieved:

Reduction of energy via fusionbonding: **400,5 kWh/a***

Reduction of CO_2 emission via fusionbonding: **38.685 t/a***

* based on estimated production of artificial turf in 2023: 30 Mio. m²

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