



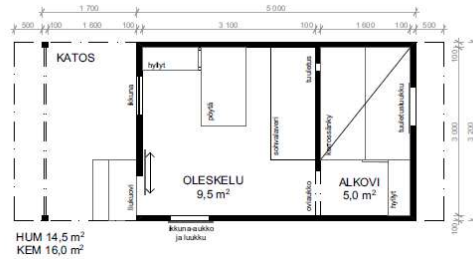
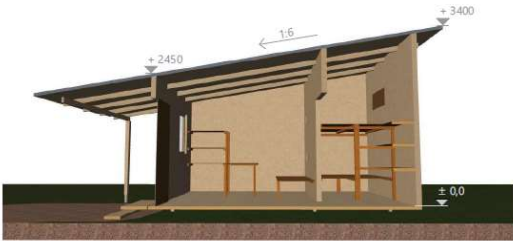
Markus Silfverberg
markus@block-solutions.com



- **Block solutions** is a new clever way of building smart, sustainable and environmentally friendly houses in a few hours.
- The material is biocomposite, a mixture of recycled plastics and fibers, materials found in excess all over the world.
- Block solutions is globally local. We operate together with our locally owned gender-equal factories to support the local employment.
- Block solutions is scalable, one 300 sqm factory can produce the Blocks for up to 3000 homes per year. Numerous factories can be operated close to the need for affordable housing.
- The DNA of Block solutions is based on UN SDG-17.



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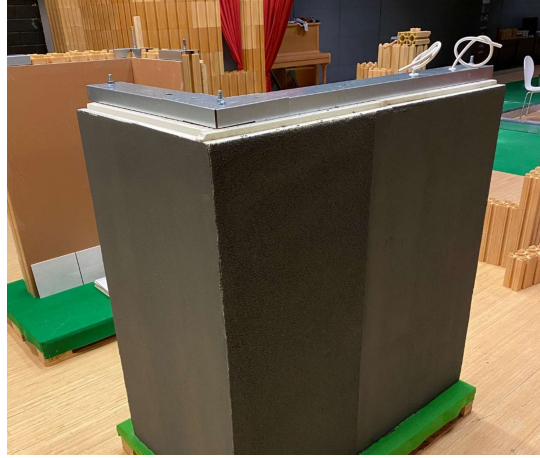
Grain of Hope:
 Designed for the UN
 If locally produced,
 the finished
 simplistic house can
 be as cheap
 as 2000-2200 USD



Block by Block



- Five Grain of Hope huts together form a small sheltered unit with a courtyard left private to hut residents. This five hut unit is perfect for a larger family group for example with many generations.
- Courtyards work as a common front yard with space to meet friends and to cook.



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License information

Licensee background.

An eligible licensee must fulfill the following principles:

- Good reputation
- Good financial background
- Agrees with code of conduct by Block Solutions
 - Gender equality
 - Equal pay for equal work
 - No child labour (according to UN specifications)
- Sufficient own funding through investors etc.
- Good relationship with local authorities
- Ability to work hard
- Entrepreneurial mindset
- Eligible for banking purposes
- Good contacts within building sector
- Good communication skills with legislators
- Ability to find subcontractors
- Abides Block Solutions values of United Nations SDG's

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License-package content:

- 680 t state-of-the-art injection molding machine
 - Auto-loader
 - Air-cooled chiller
 - Hopper dryer
 - Manipulator
 - Band saw
 - CCD detector for injection mold protection
 - 10 000 kg Pure S50 rawmaterial
 - Five year license fees for following moulds:
 - 1*1 block, 100*100*200 mm
 - 1*2 block, 200*100*200 mm
 - 1*4 block, 400*100*200 mm
 - 1*6 block, 600*100*200 mm
 - 2000 connector pieces
- Factory training for 3 operators and 1 supervisor
- On-site training for operating machinery
- On-site assistance for machine installing
- Five-year operating license
- English operating manual
- On-site helping with start-up of local business
- Geographical exclusivity, based on achieved goals



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License information
for African and Asian countries

Requirements for factory:

- stable, cool (+22-+27 deg.cels.) and dry temperature
- 300 sqm indoor operations area
- 1000 sqm area for storage of finished products and rawmaterial
- Operational bridge crane for moving moulds, otherwise LPG forklift can be sourced
- Inside height over 5 m preferably
- Stable electricity supply, high voltage up to 380 V and up to 100kW
- Fenced outside area with asphalt and shelter for storing goods
- Camera surveillance
- Guarded area
- Sufficient social areas both male and female
- Meeting room/office dustfree with A/C
- Brodband
- Sufficient basement for injection molding machine (heavy)
- Requirement for lighting 500 lux, preferably LED-lighting.
- Big door opening for forklift for the production
- Ventilation and dustfree environment
- Coolingmachinery option
- Forklift shelves
- Space for mould and other machinery maintenance.
- Preferably solar panels on roof for reduced carbon footprint.

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Timeline for a Block-solutions factory with payment schedule

Week 1:	Introduction for Block solutions Signing of NDA
Week 2:	Signing of LOI
Week 2-10:	Evaluation of partnership with possible model house.
Week 11:	Signing of MOU, preliminary binding contract, prepayment legal fees 5 000 €
Week 13:	Signing of License agreement, 1st installment, 495 000 € Order of factory equipment
Week 13-18:	Inspection of licensee's proposed factory premises
Week 20-23:	Training of licensee personnel at injection molding machine factory
Week 23:	Shipping of factory machinery
Week 28:	Arrival of factory machinery in license country. Customs and local logistics.
Week 29:	Installation of machinery assisted by Block Solutions, balance payment 500 000 €
Week 30-	Additional training of factory personnel at licensee premises as long as it is needed.

Product data sheet, Stora Enso BioComposite

DuraSense® Pure S50 Food

Code: CD2000
Created 2019-11-06



Description DuraSense® consists of a wood-fiber reinforced polymer matrix. It contains a high amount of renewable fibrous material, giving it several notable advantages, such as:

- Reduced carbon emissions compared to conventional polymers
- Excellent tensile- and flexural properties
- Frequently reduced cycle time in injection moulding applications
- Unique tactile feeling and natural appearance. The material can also be colored

Applications This grade is designed for injection moulding. It's a well rounded general purpose grade with a high fiber content and a good strength-stiffness balance.

- Cutlery
- Kitchen utensils
- Consumer goods
- Handles
- Appliances & components

Certifications & compliance Stora Enso's Biocomposite unit is fully certified in accordance with ISO 9001, OHSAS 18001, ISO 14001, ISO 50001, Chain of Custody, FSC and PEFC. Furthermore, this grade is compliant with below regulation(s) as amended. Please note that restrictions may apply, contact your sales representative for more information.

- EN 71-3, Safety for Toys
- EU Legislation 1935/2004
- EU Legislation 2023/2006
- Plastic regulation EU/10/2011

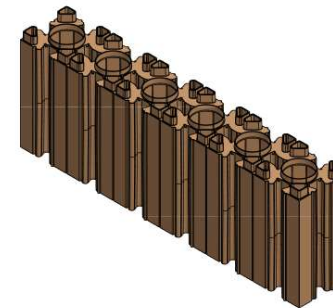
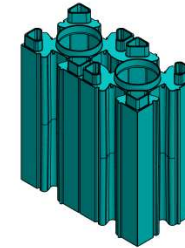
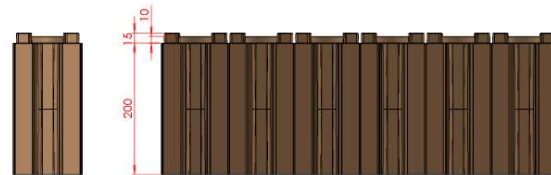
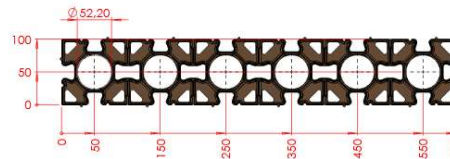
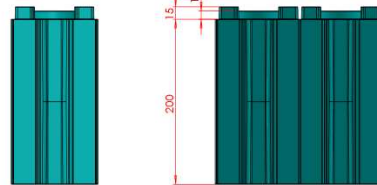
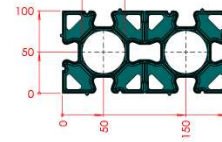
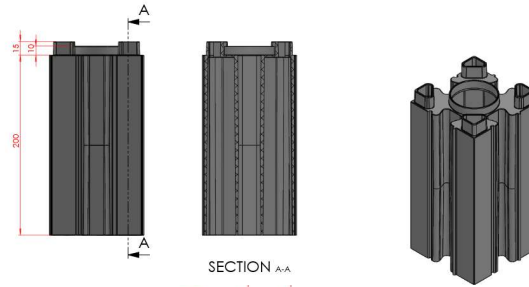
Environment The product contains a high amount of wood, a renewable resource. The material is recyclable and can also be used for energy recovery by incineration.

Typical properties	Pure S50 Food		Unit
	Standard		
Wood content (weight)	-	50	%
Density	ISO 1183	1,10	g/cm ³
Tensile strength	ISO 527-2/50	48	MPa
Tensile modulus	ISO 527-2/2	6100	MPa
Flexural modulus	ISO 178	5400	MPa
Strain at break	ISO 527-2/50	2,0	%
Charpy Impact strength, 23°C	ISO 179/1eU	15	kJ/m ²

Storage The product should be stored dry, in sealed containers, and be protected from direct sunlight. Moisture in contact with the material may lead to an inferior end product and impaired processability.

Disclaimer All information is based on Stora Enso's testing and experience and is accurate to the best of our knowledge at the date of publication. This document is designed to act as a help for safe and efficient processing of the material. Depending on use the properties achieved may differ from those stated and the information provided in this document does not serve as a guarantee or identification of quality.

SE#: 101471



ETA-approval is pending (Cairo, IFC, EU)
U-value tested Eurofins
Pressure test performed Eurofins
Burn rate test Eurofins
Worldwide patent pending
EORI available
Conceptual protection available





Block solutionsin rahoituskuviot vuosien aikana:

- Ensimmäisenä vuotena anottiin innovaatioaseteliä
 - Tällä tutkittiin materiaalien soveltuvuutta ja alustavia muottien suunnittelua.
 - Tuki: 5000 € Business Finland.
- Toisena vuotena anottiin TEMPO-rahoitusta
 - Tällä aloitettiin laajamittaisempaa tutkimusta sekä esiselvitysvaihetta.
 - Tuki: 50000 € Business Finland.



- Seuraavaksi haimme BEAM-lainaa
 - Tämän lainan avulla kykenemme tekemään tarvittavat projektin kannalta kriittiset osa-alueet jotta lisenssitehtaat saadaan perustettua.
 - Laina: 420000 € Business Finland.
- Liikekumppanuustuki
 - Blocksille on myönnetty kaksi liikekumppannustukea jonka turvin pystymme identifioimaan paikallisia kumppaneita sekä pilotoida ratkaisua kohdemaissa. Tämän turvin on mahdollista käyttää ulkopuolisia konsultteja.
 - Tukiprosentti 50-70% riippuen kohdemaasta.
 - Tuki: 128000 €. Finnpartnership



- Seuraavat vaiheet:
 - Olemme hakeneet tutkimuskumppanimme VTT:n kanssa yhdessä EU:n Horizon 2020-tukea jonka turvin pystymme jatkojalostamaan hankettamme.
 - Mahdollinen tuki: 2,25 M€.
 - Olemme hakeneet myös Business Finlandilta Developing market platformsin kautta tukea Namibian sustainable smart urban – konsortion kanssa, jossa toimimme yhdessä tutkimuspartnereidemme Tampereen Yliopiston ja Windhoekin Yliopiston kanssa.
 - Mahdollinen tuki: 50% toteutuneista hyväksytyistä kustannuksista.
 - Rinnakkain tuen kanssa olemme rahoitusverkoston kanssa tehneet konsortion johon pyrimme saamaan mukaan viher- ja vaikuttavuusrahastoja ympäri maailman.
 - Mahdollinen rahoitus kohdemaatoiminnoille alkaen 10 M€.

- Lessons learned:
 - Ely-keskuksen, Finnpartnershipin ja Business Finlandin asiantuntijat ovat todella hyviä tyyppejä mutta kiireisiä. Korona ei ole tätä ainakaan helpottanut, työtaakka on aika suuri..
 - Täytyy olla sinnikäs. Joskus tulee bumerangi, ja neuvoa ei vaan saa, vaan pitää kysyä.
 - Myyntiponnisteluja varten ei saa tukea, mutta tutkimustyöhön ja erilaisiin selvityksiin kyllä. Itse asiassa aika loogista...
 - De minimis saattaa jo itsessään pelottaa, ei siinä mitään ihmeellistä ole!
 - Finnpartnership –tuki on tosi hyödyllistä. Haku on vähän kankea, mutta kun sen lopulta ymmärtää, niin homma etenee hyvin. Kannattaa käydä hakemustyöpajoissa.
 - Ulkopuolisia asiantuntijoita kannattaa myös käyttää. Muistakaa että konsulteille ylin hyväksyttävä korvaus ei ole automaattisesti konsultin alin hinta. Konsulttienkin hinta kannattaa kilpailuttaa, tässä pelataan meidän yhteisillä varoilla!
 - Tukea kannattaa kuitenkin hakea, hyviin hankkeisiin löytyy varmasti tukea, ja hyvät hankkeet tuovat tuen pitkässä juoksussa moninkertaisesti takaisin!!!
 - Ei ne pure (ainakaan kauhean kovaa..)



Thank you for
watching!

www.block-solutions.com

