

Solder Wire HS10 Fair

HS10 Fair by FairLötet and Stannol is the first fair solder wire that has been designed for social sustainability. Current tin mining practices with their life-threatening working conditions are not fostered, because recycled materials are employed. This document explains our approach, and clarifies the criteria we apply for considering HS10Fair a “fair“ product.

Why is there a need for action regarding tin-solder?

Regarding the soldered joints of electronic devices, tin makes up for the largest weight proportion. It is essential for production, repair, prototyping and handicrafts. Most producers of tin-solder prefer tin that is the product of the first smelter. The resulting supply chain includes mining sites that extract tin under conditions highly hazardous to man and the environment.

Problems in tin mining

In 2012, the environmental advocacy organization Friends of the Earth reported on tin mining in Bangka, Indonesia¹. They showed how a lack of safety regulations leads to injuries in workers.

Tin mining causes vast environmental destruction, exterminating the basis of life of those who depend on healthy ecosystems, such as fishermen and farmers. Some of these people are then, in turn, forced to mine tin to survive, despite the health risks.

According to the report, Indonesia is the world's biggest exporter of tin, 90% of it stemming from the island of Bangka. Tin mining in the Democratic Republic of Congo contributes to financing the prevailing civil war². The mining often takes place under extremely dangerous conditions, which even exist in mines certified as 'conflict free'³.

These are the common problems in tin mining:

- The **working conditions** are usually harmful to the health due to exposure to hazardous dusts and insufficient work safety. Also, unsafe mines and open pit mining under water claim lives or cause severe injuries.
- The **payment is below subsistence level** and does not allow the workers to escape from poverty. Child labor is a common condition.
- Mines are created and operated without weighing the interests of the different stakeholders. Instead, the local population suffers **forceful relocation** and repression. Very often the **environment**, a vital resource for farmers and fishers, is destroyed.
- There is a lack of basic **worker rights**, such as right of freedom of association.

1 http://www.foe.co.uk/sites/default/files/downloads/tin_mining.pdf

2 https://en.wikipedia.org/wiki/Mining_industry_of_the_Democratic_Republic_of_the_Congo#Environmental_and_occupational_health

3 <http://www.dissentmagazine.org/article/beyond-conflict-minerals-the-congos-resource-curse-lives-on>



HS10 Fair is unique

The main aim in developing *HS10 Fair* was to stop supporting the irresponsible tin mining involved in solder production. We accomplish this goal by reusing tin that already has been employed industrially before. Whilst we mainly focus is on tin, there are further special features for improved sustainability: We make use of responsibly produced rosin, and we compensate for carbon emissions.

Secondary tin for a supply chain without exploitation

When acquiring and processing *fresh* tin from primary smelters at the commodity markets, the supply chains include irresponsible tin mining practices. In order to break this circle, recycled tin is an attractive and easily accessible material. Moreover, from an environmental point of view it makes perfect sense to recycle tin.

HS10 Fair uses two different material sources: Firstly, soldering tin from the wave soldering machine of a German electronics manufacturer is used. This material already contains most of the copper that is needed for the alloy of the solder wire. Secondly – as the material has already been employed in an industrial production plant - it is reprocessed by adding electrolytically purified tin.

New thoughts: Responsibly sourced rosin

Colophony from natural resin provides the basis for the flux which is worked into the solder wire. On colophony production, even less information is available as compared to tin production. For *HS10 Fair*, we strive to use colophony from a project with special attention to social issues.

Compensation of carbon dioxide emissions

The CO2 emissions of the energy consumed during reprocessing of the tin and production of the wire are compensated by paying for carbon offset projects by *atmosfair*.

Supporting civil society engagement in the South and North

A part of the sales proceeds goes into civil society initiatives. *FairLötet* will donate 25 per cent of this share to WALHI (Friends of the Earth Indonesia), an NGO very successful in drawing attention to issues in producing countries. The remainder will be used to finance the future efforts of *FairLötet* in raising awareness, public information, global learning in electronics and new projects on fair electronics.

How fair is *HS10 fair*?

HS10 Fair is a first step towards a fair solder wire. The result is the first solder that we know of that puts a special emphasis on social criteria. We evaluate the expected achievements of the project as follows.

What does 'fairness' mean?

We see two main aspects of fairness: The fair conduct of trade and the facilitating of economic well-being.

Fair trade means that everybody involved in the production of a product is treated fairly and that exploitation violating the humans rights is banned. Within the European Union, severe forms of exploitation - such as those observed in tin mining (see below) – are considered to have been eliminated, provided that the involved companies comply with the laws, as it is true for those involved in the production of *HS10 Fair*.



Facilitating the creation of economic wealth is connected to the idea of fair trade: The trade with natural resources should allow the countries of the global South to sustainably accumulate some wealth. In a way, this is already happening with fair trade coffee and chocolate.

However, regarding minerals trade, the prevailing intransparency at commodities exchanges forms an obstacle to the facilitation of the transfer of economic wealth based on fair trade, because the commodities can usually not be traced back. Apart from *HS10 Fair*, there are no purchasable supplies of tin for consumers with a documented supply chain.

Secondary resources and transfer of economic wealth

By using secondary resources from recycling, we avoid unfair working conditions and exploitation of workers. Producers and agents with harmful working conditions are not supported. Environmental pollution and destruction of natural resources are averted, too.

It is beyond controversy that also the imports of goods which have been produced under exploitation of workers may have a positive effect on wealth in the exporting countries. This argument is often used against the idea of fair trade, because at least a little money is going to people who might be unemployed otherwise. If these forms of production were curbed, even this little bit of value added would be done somewhere else and would be lost for the workers. We believe that this is, especially in tin mining, is only part of the truth. As explained above, tin mining is often accompanied by massive environmental destruction which does not only jeopardize the livelihoods of the miners but also those of the populations of whole landscapes, and even further aggravates their situations.

In order to allow exporting countries to participate in wealth creation by trading tin, the tin would have to be purchased either directly or via a documented supply chain from a source with known acceptable production conditions. Such a source of tin is currently not known to us.

As a meager replacement, we will financially support civil society groups in mining areas. Nevertheless, this will not achieve the same economic sustainability as true fair trade. With *HS10 Fair*, we will show that there is a demand for fairly traded commodities.

Support for a socially sound development of the colophony production

By our still unfinished efforts in purchasing colophony we would like to promote the fair trade idea in this market segment. While the purchased amount is tiny, we create publicity for the rarely discussed sustainability of colophony.

Indicator for demand and second-round effects

On account of the small quantities of tin processed for the first batch of *HS10 Fair*, we do not think that the production will lead to a measurable effect in the global commodities market. We aim at creating a signal instead: Consumers for the first time have a choice to express their interest in solder products which are special in terms of social responsibility. We hope that other suppliers of materials and components for electronics will become aware and be encouraged to offer socially responsible products themselves.

HS10 Fair will be an important tool for the educational work of FairLötet. It will be a tangible token to demonstrate social sustainability in the electronics industry. This will allow us to reach audiences on fairs and in maker spaces which are not regularly attending informational events on fair electronics.



Further steps

From our perspective, the use of secondary materials is reasonable and appropriate in order to create a product that excludes exploitation from the supply chain. Nevertheless, it neglects the aspect of participation in wealth creation. We plan to focus more on this aspect in the future, for example by collaborating more closely with NGOs that are active in mining areas in the global South or by directly sourcing tin that was indeed produced under acceptable conditions.

The partners

HS10 Fair is the result of the collaboration between Stannol and FairLötet.

Stannol is a German manufacturer of high-quality solder for industrial electronics production as well as for home users. A medium-sized business with 70 employees on two sites in Germany, Stannol produces the complete range of solder material: Soldering alloys, solder wires, solder paste and flux. Stannol plans to use *HS10 Fair* to present and establish sustainable solder in the electronics industry.

FairLötet was started in 2014 by fair electronics activists determined to create a tangible result beyond informational campaigns and persuading multinationals. Our aim is to work constructively with businesses. Since 2015, FairLötet is a Germany-registered association aiming at non-profit status.

