

Mining Women and their Gender-Inappropriate PPE: The Overall and Safety Belt



The mining industry in South Africa, prior to 2007, can be labelled as a sector dominated by the masculine gender, whereby positions underground were only reserved for male workers, as women were perceived to not have the equal physical capabilities to withstand working in such a labour intensive environment. This clear labour divide between men and women in the mining production sector has been seen to restrict women from contributing to the 'production sphere' (Benya 2009:14). However, over time the eventual inclusion of women in the production domain, has allowed women to start out being employed in 'low-status' careers undertaking administrative positions as well as unskilled lower ranked activities such as being sweepers, cleaners, office attendants, nurses and managers (Badenhorst 2009:55).

Although this may be perceived to be discriminatory towards women, the under-representation of women working underground undertaking 'higher-status' careers also reflects a far broader phenomenon of social inequality. Granted that there has been progress on the employment rate of women miners in south Africa since the release of the mining charter in 2007, which stipulated a 10% women employment rate within the mining companies' total workforce, new additional challenges have been introduced to miners, mine companies and unions (Diliza 2009:1). Due to the 'macho' nature of the environment, women feel the constant struggle to 'fit' in this male dominated environment which can arguably find women wanting to leave the industry where women are constantly feeling undermined and fearful in their working setting. The extreme hostile environment has women fearing for their safety from sexual harassment, intimidation and assault from their male colleagues (Badenhorst 2009:62).

Although the social aspect of working underground for women is problematic there are additional physical challenges that are experienced by women. According to the International Labour Organisation women workers are also labelled as “vulnerable workers” and therefore it can be argued that women are indeed more vulnerable when subjected to the harsh mining conditions and in turn illness and injury. Since the Introduction of women in underground mining, it stands to reason that the Personal Protective Equipment (henceforth abbreviated as PPE) issued to them was previously designed for men and therefore has not necessarily been tailor made to fit women. Therefore, it is possible to say that most of these struggles that women experience are due to the gender-inappropriate gear has been supplied to them.

Recent issues that have been noted by the National Union of Mining (NUM), General Secretary, Frans Baleni on the 27th of August 2013 at the Mining Lekgotla in Johannesburg relates to the general struggles women face and in particular the struggles relating to the ill-fitting overall that is supplied to them. Considering the previously mentioned challenges, the topic of women in mining is a relatively new phenomenon and since there is not much scholarly information written on women working underground it is difficult to identify the most problematic areas in terms of PPE through only the literature. Therefore, through my research as a student studying Industrial Design I decided to adopt a human-centered design approach for the research of this study. Through the process of an open discussion with a group of female miners and a key informant, I was able to identify the most problematic item of PPE. The protective overall and safety mining belt used by women miners was reported as offering women the most challenges whilst working underground and therefore needs to be addressed with the purpose of redesigning the products in order to best suit the women miner’s needs, comfort and safety requirements.

For women, problems with using a one piece overall is that they are not practical to remove and put back on after going to the toilet or at the end of a shift. This is because women need to remove the entire top half of their overall in order to go to

the ablution facilities. Laura Stradiotto in her research has also mentioned that when women remove the top half of their overall all their belongings fall out of their pockets whilst their sleeves 'drag' on the ablution floor. In addition, due to the excessive heat conditions underground both genders need to keep hydrated; however for women, this means more trips need to be taken to the ablution facilities, which is easier said than done. Furthermore, the current one-piece overall design in conjunction with the mining safety belt design do not operate in accordance with each other, as going to the bathroom requires both products to be removed. Thus creating a dark setting that unfortunately allows for inappropriate physical or sexual attacks underground take place. The one piece overall has also been reported to be tight fitting and uncomfortable. Whilst the option of a two piece overall causes discomfort around the hips, buttocks, thighs, chest and breast area as well as exposing the lower back.

In addition to the problems experienced with the overall worn by women, there are also challenges experienced with the mining safety belt. The mining safety belt is used harness both the oxygen self-rescue pack and the battery pack for the headlamp, which both weigh 2.4kg and 900g respectively. Issues with this item is noted when one has to carry the heavy weight of the two devices which causes extreme discomfort whilst working as well as chaffing of the skin on the lower abdomen. The uneven weight distribution of the oxygen self-rescue pack has also been seen to cause lower back pain and the easy swivel movement of the device causes major discomfort when working and in particular when crawling through the mining stopes.

About WIM Equip and my intentions as a Product Designer

WIM Equip is the brand that has been developed to design and improve on the designs of PPE for women in mining South Africa. Currently, the brand caters to two products of PPE, being the overall and safety belt. However, it has further scope into additional items of PPE suitable for women which will be based on their anthropometric data in order to improve on their comfort, safety and personal

hygiene at work. There are also possibilities in manufacturing and distributing the current two products and any further products within the South African mining industry with the possible scope of distribution into further industrial industries such as construction.

Moreover the issues that women experience with these two items of PPE have an enormous impact on their safety and security, personal comfort and work performance. Bearing in mind that the mining sector continues to remain to be the main driving forces of the South African economy, it is vital that they promote gender equality and discourage discrimination in the underground working environment as well as encouraging manufacturers to start catering for the safety of women underground.

However, the success of this project lies within funders who are interested in funding a project that has been 'neglected' and who are available to 'fill the gap' in South Africa's main driving sector.

For further information and comments:

WIM Equip

Monica Monsanto – Director and Designer

mmonsanto26@gmail.com

*References are available on request

