“LOOKING BEYOND THE HORIZON” – THE LEPROSY MISSION TRUST INDIA MICRO CELLULAR RUBBER UNIT

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Symposium: Footwear
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Micro Cellular Rubber Unit (Askew Workshop)

MCR production of last 36 years

Insoles manufactured for anesthetic feet

7, 55,884 insoles from 1977 - 2012
Introduction

• The Micro Cellular Rubber (MCR) unit was established in Vizinagaram, Andhra Pradesh in India by The Leprosy Mission Trust India (TLMTI)

• The MCR unit caters to the needs of Leprosy affected patients with neuropathic feet and other foot deformities within and outside India.

• The MCR Unit till date has provided over a million pairs of MCR insoles to all with anaesthetic feet and still continues to do so.
OBJECTIVES

• Evolve the footwear unit in TLM Vizinagaram into a world class centre which manufactures and conducts research on footwear to make it affordable, relevant and effective for patients with foot disabilities
Milestones of the MCR Unit

1977
Inaugurated by Eddie Askew and machinery installed

1983
Regular Production and supply Started

1993
Mixing Mill installed

2000
Hydraulic Press Installed & Colored MCR sheets made

2010
4 pairs of insoles made in single MCR sheet

2011
Steam boiler installed to vulcanize MCR sheet

2012
Recognized by Govt of India as testing Centre

Inaugurated by Eddie Askew and machinery installed
METHODOLOGY – Process (1)

• Natural rubber and 13 chemicals go into the making of MCR.

• When rubber compound is added with blowing agent, fine cell structure is formed on the vulcanisate after curing. This rubber vulcanisate is called microcellular.

• The cell structure of microcellular is normally closed with gas trap within the cell.
METHODOLOGY – Process (2)

• Since the blowing can be controlled the final products density varies, the bigger the cell size the lower the density and the softer the material.

• The most preferable properties of microcellular are low density, lightweight, high impact absorption and softness that assures comfort.
Quality Maintenance

Regular monitoring on the quality of the MCR sheets/ Sandals are done by sending the sheets to Indian Government Rubber Research Centers and footwear research for

• Raw rubber testing

• Chemical mixing

• Shore hardness of the product (Tensile Strength, Elongation strength, Tear strength, blooming test)
Leprosy affected patients benefitted
Conclusion

• Develop superior quality MCR sheets and sandals at an affordable cost.

• An incubator to further analyze and develop on the research findings and innovations available on footwear from within and outside the organization.
Conclusion

• Studies to develop alternative materials for MCR’s which relieve pressure in anesthetic feet which are acceptable and affordable by patients.

• Fabrication of customized insoles for patients and the centralized supply of footwear to be made into a reality.
THANK YOU