

# Introduction: SABI Design Norms

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## **Three sections**

- 1. An introduction or background**
- 2. Suggested implementation method of changes**
- 3. Some examples**



## 1. Where are we?

- **SABI is .....the recognized representative organization for the irrigation industry in South Africa.....as Michael said on the first day**
- **With recognition comes responsibility**
- **With responsibility you need a set of rules**
- **The rules must remain relevant**



## Just a short note

- **I must say when I go through the Irrigation Design Manual, the Code of Practice and the SABI Design Norms, I feel humbled and rather out of place standing here with the hard work done by past and present institutions, individuals and SABI members.**
- **These are true monuments to them.**



## **What has happened in the last while?**

- **A totally new landscape in which we are moving. We saw that in the last two days.**
- **Rapid advances in the irrigation industry**
- **Innovations and new products**
- **Energy crisis and the associated high energy costs**
- **Loadshedding, solar**
- **Troubled worldwide economies**

**Let us look at how this affects us**



# Why should we have design norms or **minimum standards**?

- **Maintain high standard. Tian?**
- **Self-regulation – remember we are not statutory. That is how SABI started.**
- **Standardize. Design reports should be “riddled” with SABI Norms.**
- **Guidelines** for designers especially new designers. Not the design manual.
- **Protect the designer and the client**
- **Excellence – continuous reassessment**



# Who are the Norms aimed at or who are they for?

- **Practicing designers**
- **Remote/isolated operators**
- **Newcomers**
- **“Non-approved designers”. Who are they?**
- **Clients or end users**

# Are we achieving this or reaching these people?

- **Practicing designers**
- **Remote/isolated operators**
- **Newcomers**
- **“Non-approved designers”**
- **Clients – initiatives to reach out to farmers**



## **Design norms, guidelines or minimum standards, or a combination of these?**

- **The new designers need guidelines, or a “recipe” to design with, and a set of rules they can base their designs on**

## **2. What now?**

### **Some thoughts for today's discussion**

**I was requested to review the SABI Norms a while ago, which I started, and .....what next?**



## **Here are some suggestions**

- **We, the SABI members must identify what must be changed or added**
- **There should be a standing sub-committee or responsible member within the council to oversee the process of updating the SABI Norms on an ongoing basis**



- **There must be a channel to allow any member with suggestions to change or upgrade the SABI Norms, to get the information through to the responsible person(s)**
- **Remember, no one member works, or specialises in all the diverse fields covered by irrigation**

- **The suggestions must be reviewed by the sub-committee and vetted by the council**
- **Changes must be circulated in the membership or published to ensure that they are tested, accepted and implemented**



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**What do you think?**



### **3. Some examples**

- **These are some of the issues that have come up during the training**
- **By no means a complete list**
- **I could have missed something**
- **Up for discussion**
- **Should it be in the SABI Norms or the IDM?**



## Irrigation Planning Norms

- **W (wetted area) (%) calculation**  
**= wetted width / row spacing x 100**  
**It affects the reservoir volume and the GAR**
- **Recommended irrigation hours per week**
- **Clarity on nomenclature especially water holding capacity. We must align with soil scientists**

## Pipeline installation (depth and width)

- Mainlines
- Manifolds

**Bed preparation, backfilling material and compaction.**

**Mention thrust blocks.**

**Mention SABS 1200L?**

## Air valves and non-return valve location along the mainline

- **Expand on this issue**
- **It should be a separate subject in the design report**

## Pump stations

- **Flow meters are compulsory – we need to add this to the installation guidelines**
- **Detailed sizing of discharge pipework, non-return valves, hydraulic valves, flow meters, as detailed in the greenhouse irrigation section. Velocity of more than 2m/s is required by numerous accessories. This still easily complies with the 2m maximum friction loss norm**

## Pump stations - continued

- **Suction pipe spool piece before the pump inlet**
- **Filter backwash differential pressure 5m**
- **Protection, control, displays, safety for pump stations**

## Pump houses

- **Pump house design requirements – slopes, ventilation, lighting, concrete strength, drainage, safety, access for operators, power cables and control wiring**

**With automation, fertigation, dedicated mainlines should we not add a new section on pump house layout and design?**

## Other suggestions

- **Water hammer analysis - loadshedding**
- **Protection, control, displays, safety for pump stations**
- **Pump house design requirements – slopes, ventilation, lighting, concrete, drainage, safety, access**

## Other suggestions

- **Motor sizing with service factor above 1.0 of eg IE3 motors**
- **Cable sizing and current rating. We need a common approach although an electrical specialist must be involved**



## Conclusion

- **We must continuously update and improve the Norms**
- **We need a method to channel the suggestions to the right parties**
- **We must reach the target groups**
- **The Norms protect us and the client**