

# Tensar Pavement Optimisation (PO) Proposal Data Capture Form

## 1. Basic Project Information:

<b>Project Name / Location</b>	
Free of Charge Application Suggestion or indemnified Design required	
Customer Reference	
Customer Contact(s)	
Organisation(s)	
Submission Date Required	
Project Description	

## 2. Basic Application Type:

**Please tick application type(s) that you wish Tensar to consider:**

- Fully Flexible Pavement
- Flexible Composite Pavement
- Block Paving Construction
- SUDS Block Paving Construction
- Permeable Asphalt Construction
- Other Construction (please describe in section 7)

\* If available, please provide a cross section(s) of your existing pavement design.

## 3. Basic Project Data:

Application Area (m <sup>2</sup> ) or Dimensions	
Construction Capacity (of haul road) ESALs	
In-service Capacity Million ESALs	

\*For multiple application areas, please provide a site layout drawing(s) of your project.

## 4. Project Stage:

Please indicate the stage of your scheme:

- Concept / pre-planning
- Feasibility / Pre-tender
- Tender
- Detailed design
- Contractor awarded
- On site for construction

## 5. Preference for value (multiple selections can apply)

Reduced construction cost

- Cost saving value required\*

Reduced whole life cost (reduced maintenance)

- Whole life cost saving value required\*

Reduced construction programme

- Construction programme saving value required\*

Reduced carbon emissions (environmental impact)

- Carbon saving value required\*

\* Additional information from the customer will be required for Tensor to perform the value calculation(s)

## 6. Design objective (multiple selections can apply)

- Reduced aggregate thickness
- Reduced asphalt thickness
- Improved service life or capacity
- Improved H&S (reduced resources)
- Use of recycled / site won materials
- Variable subgrades (differential settlement)

Other:

## 7. Pavement Specific Information (complete relevant sections)

Pavement Layer (basic description)	Thickness (mm)	Modulus (MPa)	Detailed Description
Concrete Paving Blocks			
Sand Bedding Layer			
AC Surface Course			
AC Binder Course			
AC Base Course #1			
AC Base Course #2			
Unbound Sub-base #1			
Unbound Sub-base #2			
Capping #1			
Capping #2			
Subgrade CBR (%)			
Subgrade Stiffness (MPa)			
Subgrade Strength (kPa)			
Depth of water (mbgl)			

### Guidance Notes

For general guidance, the following notes are provided, should detailed information not be known. These values will need to be verified prior to detailed design and construction.

#### Typical asphalt stiffness values

3100 MPa HRA 40/60 (Hot Rolled Asphalt)

2500 MPa SMA / DBM (in surface course)

2500 MPa DBM 100/150 (in binder and base course)

4700 MPa\* DBM / HDM 40/60 (in binder and basecourse)

\*For a 4700 MPa layer, the structural contribution will be capped to an a-value of 0.5

#### Single layer compaction thicknesses (assuming 5 x aggregate size)

AC6 30mm maximum

AC10 50mm maximum

AC20 100mm maximum

AC32 150mm maximum

#### Typical aggregate stiffness values

135 - 150 MPa Unbound Sub-base (max. single layer compaction thickness = 225mm)

60 - 75 MPa Unbound Capping (max. single layer compaction thickness = 250mm)

## 8. Pavement Parameters

### Reliability (Factor of Safety\*)

Suggested levels of reliability based of typical route classifications and route capacity are given below. \*A reliability of 50 % is a FOS of only 1.

Route Classification	Typical Capacity	Selection	Reliability
3+ Lane Motorway	80M+ ESALs	<input type="checkbox"/>	95%
Dual Carriageway	50M+ ESALs	<input type="checkbox"/>	90%
Main Road	20M ESALs	<input type="checkbox"/>	85%
Minor / Local road	10M ESALs	<input type="checkbox"/>	80%
Development / Housing	5M ESALs	<input type="checkbox"/>	80%
Unclassified / Private	1M ESALs	<input type="checkbox"/>	80%
Car Park Access Road	0.5 ESALs	<input type="checkbox"/>	80%
Car Park Bays	50,000 ESALs	<input type="checkbox"/>	80%
Temporary Routes to be subsequently removed	50,000 ESALs	<input type="checkbox"/>	50%

### Serviceability Indices

Suggested levels of reliability for various classifications of route are given below.

Route Classification	Typical Capacity	Selection	Terminal Serviceability
3+ Lane Motorway	80M+ ESALs	<input type="checkbox"/>	3.0
Dual Carriageway	50M+ ESALs	<input type="checkbox"/>	3.0
Main Road	20M ESALs	<input type="checkbox"/>	2.5
Minor / Local road	10M ESALs	<input type="checkbox"/>	2.0 - 2.5
Development / Housing	5M ESALs	<input type="checkbox"/>	2.0 - 2.5
Unclassified / Private	1M ESALs	<input type="checkbox"/>	2.0
Car Park Access Road	0.5 ESALs	<input type="checkbox"/>	2.0
Car Park Bays	50,000 ESALs	<input type="checkbox"/>	2.0

#### Notes:

The terminal serviceability index is an indication of the level of degradation of the pavement which would require rehabilitation, resurfacing or reconstruction.

3.0 = 12% of roads users stating the ride quality is unacceptable (resurfacing required).

2.5 = 55% of roads users stating the ride quality is unacceptable (remedials required).

2.0 = 85% of roads users stating the ride quality is unacceptable (reconstruction required)