Verified RealEstate™

RE REGULATORY RECORD

RERA Document

The document as the regulator published it, reproduced in full behind this page.

Published for reference. The authority's own register is the operative record.

Verified RealEstate™
3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai 600 097, India

hello@verified.realestate
+91 9996 12 9996
verified.realestate

DIGITALLY VERIFIED RECORD

PROJECT	NIVASAN VAKULAM APARTMENT-AT VILANKURICHI,COIMBATORE
CONSULTANT	THE DESIGN ONE
DESIGN OF COLUMN	C1

DESIGN DATA:

Axial Load, P	=	810	kN
Breadth of the column, b	=	200	mm
	=	0.2	m
Depth of the column, D	=	450	mm
	=	0.45	m
Unsupported length of the column in x-x axis, L_x	=	3	m
Unsupported length of the column in y-y axis, L_y	=	3	m
Bending Moment about x-x axis, M_x	=	35.7	kNm
Bending Moment about y-y axis, M_y	=	35.7	kNm
Effective length factor	=	0.85	
Grade of concrete, f_{ck}	=	20	N/mm^2
Grade of steel, f_y	=	500	N/mm^2

EFFECTIVE LENGTH:

Effective length of the column in x-x axis, L_{ex}	=	2.55	m
	=	2550	mm
Effective length of the column in y-y axis, L_{ey}	=	2.55	m
	=	2550	mm

CHECK FOR SLENDERNESS RATIO:

L_{ex}/D	=	5.6666667	
		<12	

Hence, short column

L_{ey}/b	=	12.75	
		>12	

Hence, long column

CHECK FOR MINIMUM ECCENTRIES:

$e_{ex, min.}$	=	$(L_{ex}/500)+(D/30)$	
	=	20.1	mm
	OR	20	mm
$e_{ey, min.}$	=	$(L_{ey}/500)+(b/30)$	
	=	11.766667	mm
	OR	20	mm
Factored Bending moment in x-x axis, M_{ux}	=	53.55	kNm
Factored Bending moment in y-y axis, M_{uy}	=	53.55	kNm
Factored Load, P_u	=	1215	kN
	=	1215000	N
M_{ux}/P_u	=	44.074074	mm
		>20	mm
M_{uy}/P_u	=	44.074074	mm
		>20	mm

Hence, design for uniaxial moment

LONGITUDINAL REINFORCEMENT:

Hence, Factored Bending Moment, M_u	=	53.55	kNm
	=	53550000	Nmm

Governing Axis for Bending is y-y axis

P. Senthil

P. SENTHIL KUMAR M.E.(STRUCT),AIV
Reg. No: CBE LPA/SE/SR-I/050/2024
30-A, 1st Floor, Kalidas Street,
Ram Nagar, Coimbatore - 641 009.
Cell: 97866 00478

$M_u/f_{ck}bD^2$	=	0.14875	
	=	0.149	
$P_u/f_{ck}bD$	=	0.675	
	=	0.68	
Effective cover, d'	=	50	
Therefore, d'/D	=	0.25	
	=	0.2	
From Interaction chart of SP 16			
p/f_{ck}	=	0.1	
p	=	2 %	
0.8%<p<4%			
Hence O.K.			
A_s	=	1800 mm^2	
Assume		20 mm dia bars	
No. of bars, N	=	5.7324841	
	=	6 Nos.	
$A_{s\ provided}$	=	1884 mm^2	
Actual p	=	2.0933333 %	
0.8%<p<4%			
Hence O.K.			
Hence, provide		***6 #***	***20 mm dia***

But Provided 4Nos 20# and 4 Nos-16# bars uniformly distributed on four sides

LATERAL REINFORCEMENT:

Diameter of Lateral Ties:

Dia of Lateral Ties	=	5 mm	(OR)
Dia of Longitudinal rft./4	=	5 mm	
Whichever is lesser			
Therefore Dia of lateral ties	=	5 mm	
	=	8 mm	

Spacing:

Least lateral dimension of the column	=	200 mm
16*Dia of the longitudinal bar	=	320 mm
	=	300 mm
Whichever is lesser		
Required Spacing	=	200 mm
Therefore, adopt		***8 mm dia lateral ties @ 200 mm c/c***

P. SENTHIL KUMAR M.E.(STRUCT),AIV
Reg. No: CBE LPA/SE/JGR-I/050/2024
30-A, 1st Floor, Nallaas Street,
Ram Nagar, Coimbatore - 641 009.
Cell: 97866 00478

PROJECT	NIVASAN VAKULAM APARTMENT- AT VILANKURICHI ,COIMBATORE
CONSULTANT	THE DESIGN ONE
DESIGN OF BEAM	Beam -B1

DESIGN DATA:

Breadth of the beam, b	=	200 mm	=	0.2 m	
Effective depth of the beam, d	=	480 mm	=	0.48 m	
Width of the supports	=	200 mm	=	0.2 m	
Grade of concrete, f_{ck}	=	20 N/mm^2			
Grade of steel, f_y	=	500 N/mm^2			
Moment of Resistance, M	=	97 kNm			
Uniformly Distributed Load, W	=	58.1 kN/m			
Length of the beam,L	=	5.1 m	=	5100 mm	

PRELIMINARY DIMENSIONS OF THE BEAM:

Assume effective cover of the beam,c'	=	30 mm	=	0.03 m	
Therefore,overall depth of the beam, D	=	510 mm	=	0.51 m	
a)Effective Span, $L_{eff.}$	=	L+d	=	5.58 m	
b)Effective Span, $L_{eff.}$	=	L+W	=	5.3 m	
Therefore, adopt Effective Span, $L_{eff.}$	=	***5.3 m (minimum)***			

ULTIMATE MOMENTS:

$x_{u\ lim.}/d$	=	0.48		33
Therefore, $x_{u\ lim.}$	=	230.4 mm		
M_u'	=	$0.36*f_{ck}*b*x_u*(d-0.42x_u)$		
	=	127147180 Nmm		
	=	127.14718 kNm		
Ultimate moment, M_u	=	1.5*M =	145.5 kNm	
M_u''	=	M_u-M_u'		
	=	18.35282 kNm		
	=	18352820 Nmm		

TENSILE REINFORCEMENT:

From I.S. 456:2000, pg.no. 96, Annex-G,section G-1.1 a)		
$x_{u\ lim.}/d$	=	$(0.87*f_y*A_{st})/(0.36*f_{ck}*b*d)$
Therefore, $A_{st\ 1}$	=	762.703448 mm^2
M_u''	=	$f_{sc}*A_{st\ 2}*(d-d')$
where d'	=	distance from top fibre to the centre of compression reinforcement.
	=	50 mm

P. SENTHIL KUMAR M.E.(STRUCT),AIV
Reg. No:CBE LPA/SE/GR-I/050/2024
30-A, 1st Floor, Kalidas Street,
Ram Nagar, Coimbatore - 641 009.
Cell: 97866 00478

Therefore, $A_{st\,2}$ = 98.1171877 mm^2

Total A_{st} = 860.820636 mm^2

Assume 16 mm dia bars.

a_{st} = 200.96 mm^2

Number of bars, n = 4.28354218 = 5 Nos.

Spacing = 40 mm

Therefore adopt 5 nos. of 16 mm dia bars @ 40 mm c/c. in tension zone.

$A_{st\ provided}$ = 1607.68 mm^2

COMPRESSION REINFORCEMENT:

$A_{st\,2}$ = $(A_{sc}*f_{sc})/(0.87*f_y)$ (In pg.no. 56 in R.C.C. book)

ε_{sc} = $0.0035*((x_u-d')/x)$ By interpolating:

f_{sc} = 353.725 N/mm^2

A_{sc} = 120.661465 mm^2

Assume 16 mm dia bars.

a_{st} = 200.96 mm^2

Number of bars, n = 0.60042528 = 1 Nos.

Spacing = 100 = 100 mm

Therefore adopt 2 nos. of 16 mm dia bars @ 100 mm c/c. in compression zone.

$A_{sc\ provided}$ = 401.92 mm^2

ε_{sc}	f_{sc}
0.00276	351.8
0.00298	353.725
0.0038	360.9

CHECK FOR SHEAR:

From I.S. 456:2000, pg.no. 73, Annex-B-5.1)

Nominal shear stress, τ_v = v_u/bd

where shear force ,v_u = 222.2325 kN

= 222232.5 N

τ_v = 2.31492188 N/mm^2

% of tensile reinforcement, p_t = 1.67466667

FROM IS 456:2000 pg.no.:73 table 19:

p_t	τ_c
1.5	0.75
1.674666667	0.76397333
2	0.79

Design shear stress, τ_c = 0.76397333 N/mm^2

$\tau_v > \tau_c$ **Hence not safe**

Hence provide shear reinforcement

v_{us} = $v_u-\tau_c bd$

= 148891.06 N

= 148.89106 kN

Use 2 legged 8 mm dia bars

A_{sv} = 100.48 mm^2

P. Senthil

P. SENTHIL KUMAR M.E.(STRUCT),AIV
Reg. No: CBE LPA/SE/GR-I/050/2024
30-A, 1st Floor, Kalidas Street,
Ram Nagar, Coimbatore - 641 009.
Cell: 97866 00478

s_v	=	$(0.87*f_y*Asv*d)/v_{us}$	
	=	140.909897	mm
	=	140	mm
s_v	>	0.75d	
	=	360	mm
Adopt	**2**	**legged**	**8 mm dia bars**
	@	**140**	**mm c/c near the support &**
		350	**mm c/c at mid-span.**

CHECK FOR DEFLECTION:

$(l/d)_{act}$	=	10.625
$(l/d)_{max}$	=	$(l/d)_{basic}*k_t*k_c*k_f$
p_t	=	1.67466667
p_c	=	0.41866667
Refering the diagram,		
k_t	=	0.93
k_c	=	1.1
k_f	=	1
Therefore, $(l/d)_{max}$	=	20.46
		Hence safe against deflection

P. Senthil

P. SENTHIL KUMAR M.E.(STRUCT),AIV
Reg. No:CBE LPA/SE/GR-I/050/2024
30-A, 1st Floor, Kalidas Street,
Ram Nagar, Coimbatore - 641 009.
Cell: 97866 00478

THE LANDLENS SUITE

Eight ways to know a piece of land before you pay for it.

This report covers one part of the picture. These cover the rest, drawn from the same government records, for any property in Tamil Nadu.

LandLens One
Ask anything about a property and get an answer grounded in live government records, with the sources shown.
/landlens/one

Verify My Land
Every record check run on one property and returned as a single report.
/landlens/verify-my-land

Legal Opinion
An advocate's written opinion on the title, built on the records we pull for it.
/landlens

One Map
Every layer on one map: the parcel, its boundary, zoning, water bodies and what sits around it.
/landlens/one/map

PriceMap
What land actually changed hands for around this plot, taken from the registered deeds.
/landlens/pricemap

Build Scope
What you are allowed to build here: floor space, height, coverage and setbacks.
/landlens/build-scope

Property Tracker
Watch a property and hear about it when something new is registered against it.
/landlens/property-tracker

Deal Room
Run the transaction in one place: documents, stamping, signatures and the parties.
/landlens/deal-room

FREE TOOLS · NO ACCOUNT NEEDED

Twenty-four checks you can run yourself, at no cost.

Records and verification

The registers themselves, read for you.

- Encumbrance Certificate
- Patta and Chitta
- Field Measurement Sketch
- EC Analyzer
- Bank charge check
- Court case search
- Seller background check
- Approval check by survey

Value and duty

What it is worth and what it costs to register.

- Guideline value by street
- Guideline value by survey
- Stamp duty and registration fees
- Capital gains
- Floor space index
- Area unit converter

Zoning and land use

What the plan says can happen on this land.

- Land use zone finder
- CMDA land use check
- Coastal regulation zone
- Master plan check
- Water bodies finder
- Airport height clearance

Registers and directories

Who holds it, and which office keeps the record.

- Find your registering office
- Temple property check
- Waqf property check
- RERA register

Every free tool
/tools

Services we run for you
/services

The LandLens suite
/landlens/one

Verified RealEstate™

Every claim in this document traces back to a government record.

- Legal opinions, due diligence and title verification
- Building plan, layout and sub-division approvals
- Completion and occupancy certificates, regularisation
- Escrow, negotiation and NRI property management
- Land survey, soil testing, architecture and construction

Verified RealEstate
3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai 600 097, India
hello@verified.realestate
+91 9996 12 9996

Prepared from the registers named on the page each finding sits on. Where a register could not be read, this document says so in its place rather than leaving the gap to be read as a clean result.