



STKO COMMAND'S LIST FOR OPENSEES 3.2.0



Elements 2
Physical properties 5
Model builder 10

ELEMENTS

STKO Element		OpenSees Element
category	name	name
beam_column_elements	AxEqDispBeamColumn2d	AxEqDispBeamColumn2d
	dispBeamColumn	dispBeamColumn
	dispBeamColumnInt	dispBeamColumnInt
	dispBeamColumnThermal	dispBeamColumnThermal
	dispBeamColumnWithSensitivity	dispBeamColumnWithSensitivity
	elasticBeamColumn	elasticBeamColumn
	elasticForceBeamColumn	elasticForceBeamColumn
	forceBeamColumnThermal	forceBeamColumnThermal
	forceBeamColumnWarping	forceBeamColumnWarping
	elasticForceBeamColumnWarping	elasticForceBeamColumnWarping
	forceBeamColumn	forceBeamColumn
	forceBeamColumnCBDI	forceBeamColumnCBDI
	forceBeamColumnCSBDI	forceBeamColumnCSBDI
	internalBeamColumnElement	internalBeamColumnElement
	MVLEM	MVLEM
SFI_MVLEM	SFI_MVLEM	
bearing_elements	elastomericBearingBoucWen	elastomericBearingBoucWen
	elastomericBearingBoucWenMod	elastomericBearingBoucWenMod
	elastomericBearingPlasticity	elastomericBearingPlasticity
	elastomericBearingUFRP	elastomericBearingUFRP
	ElastomericX	ElastomericX
	flatSliderBearing	flatSliderBearing
	FPBearingPTV	FPBearingPTV
	HDR	HDR
	KikuchiBearing	KikuchiBearing
	LeadRubberX	LeadRubberX
	multipleNormalSpring	multipleNormalSpring
	multipleShearSpring	multipleShearSpring
	RJWatsonEqsBearing	RJWatsonEqsBearing
	singleFPBearing	singleFPBearing
	TFPbearing	TFPbearing
TripleFrictionPendulum	TripleFrictionPendulum	
YamamotoBiaxialHDR	YamamotoBiaxialHDR	
brick_elements	20NodeBrick	20NodeBrick
	bbarBrick	bbarBrick
	bbarBrickWithSensitivity	bbarBrickWithSensitivity

STKO Element		OpenSees Element	
category	name	name	
	SSPbrick	SSPbrick	
	stdBrick	stdBrick	
RC Beam-Column Joint Models	RCJointModel3DElement	Note (1)	
RC Beam-Truss Joint Models	RCTrussModel2DElement	RCTrussModel2DElement	
	N4BiaxialTruss	N4BiaxialTruss	
cable_elements	CatenaryCable	CatenaryCable	
contact_element	BeamContact2D	BeamContact2D	
	BeamContact2dp	BeamContact2dp	
	BeamContact3D	BeamContact3D	
	BeamContact3dp	BeamContact3dp	
	BeamEndContact3D	BeamEndContact3D	
	BeamEndContact3dp	BeamEndContact3dp	
	SimpleContact2D	SimpleContact2D	
	SimpleContact3D	SimpleContact3D	
joint_elements	beamColumnJoint	beamColumnJoint	
	Joint2D	Joint2D	
link_elements	twoNodeLink	twoNodeLink	
misc	VS3D4	VS3D4	
quadrilateral_elements	enhancedQuad	enhancedQuad	
	nineNodeQuad	nineNodeQuad	
	quad	quad	
	quad3d	quad3d	
	quadWithSensitivity	quadWithSensitivity	
	SSPquad	SSPquad	
	bbarQuadUP	bbarQuadUP	
shell	ShellANDeS	ShellANDeS	
	ShellDKGQ	ShellDKGQ	
	ShellDKGT	ShellDKGT	
	ShellMITC4	ShellMITC4	
	shellMITC4Thermal	shellMITC4Thermal	
	ShellMITC9	ShellMITC9	
	ShellINLDKGQ	ShellINLDKGQ	
	shellINLDKGQThermal	shellINLDKGQThermal	
	ShellINLDKGT	ShellINLDKGT	
	ASDEAsoftware	ASDShellQ4	Note (2)
		ASDShellT3	Note (2) expected August 2020
special_purpose	HingedBeam	Note (1)	
tetrahedron_elements	FourNodeTetrahedron	FourNodeTetrahedron	

STKO Element		OpenSees Element
category	name	name
triangular_elements	tri31	tri31
truss_elements	corotTrussSection	corotTrussSection
	truss	truss
up_elements	bbarQuad	bbarQuad
	20_8_BrickUP	20_8_BrickUP
	9_4_QuadUP	9_4_QuadUP
	brickUP	brickUP
	quadUP	quadUP
	SSPbrickUP	SSPbrickUP
	SSPquadUP	SSPquadUP
	BbarBrickUP	BbarBrickUP
zero_length_element	zeroLengthRocking	zeroLengthRocking
	CoupledZeroLength	CoupledZeroLength
	zeroLength	zeroLength
	zeroLengthContact2D	zeroLengthContact2D
	zeroLengthContact3D	zeroLengthContact3D
	zeroLengthImpact3D	zeroLengthImpact3D
	zeroLengthInterface2D	zeroLengthInterface2D
	zeroLengthND	zeroLengthND
	zeroLengthSection	zeroLengthSection

- (1) STKO's tool implemented to generate automatically components already available in Opensees .
- (2) Feature implemented by ASDEA software in Opensees.

PHYSICAL PROPERTIES

STKO physical properties			OpenSees physical properties
category	subcategory	name	name
nDimensional	misc	AcousticMedium	AcousticMedium
	Other nD Materials	BoundingCamClay	BoundingCamClay
		CycLiqCP	CycLiqCP
		CycLiqCPSP	CycLiqCPSP
		DruckerPrager	DruckerPrager
		ElasticIsotropic	ElasticIsotropic
		FAFourSteelPCPlaneStress	FAFourSteelPCPlaneStress
		FAFourSteelRCPlaneStress	FAFourSteelRCPlaneStress
		FAPrestressedConcretePlaneStress	FAPrestressedConcretePlaneStress
		FSAM	FSAM
		J2Plasticity	J2Plasticity
		ManzariDafalias	ManzariDafalias
		PlaneStrain	PlaneStrain
		PlaneStress	PlaneStress
		PlaneStressLayeredMaterial	PlaneStressLayeredMaterial
		PlaneStressRebarMaterial	PlaneStressRebarMaterial
		PlasticDamageConcrete3d	PlasticDamageConcrete3d
		PlasticDamageConcretePlaneStress	PlasticDamageConcretePlaneStress
		PlateFiber	PlateFiber
		PressureDependentElastic3D	PressureDependentElastic3D
		PrestressedConcretePlaneStress	PrestressedConcretePlaneStress
		RAFourSteelPCPlaneStress	RAFourSteelPCPlaneStress
		RAFourSteelRCPlaneStress	RAFourSteelRCPlaneStress
		StressDensityModel	StressDensityModel
		Damage2p	Damage2p
		J2PlateFibre	J2PlateFibre
		TruncatedDP	TruncatedDP
		PlaneStressSimplifiedJ2	PlaneStressSimplifiedJ2
		MultiaxialCyclicPlasticity	MultiaxialCyclicPlasticity
		ElasticOrthotropic	ElasticOrthotropic
	CapPlasticity	CapPlasticity	
	Simplified3DJ2	Simplified3DJ2	
	PM4Sand	PM4Sand	
J2BeamFiber	J2BeamFiber		
ASDEASoftware	DamageTC3D	Note (2)	
Thermal	ElasticIsotropic3DThermal	ElasticIsotropic3DThermal	

STKO physical properties			OpenSees physical properties
category	subcategory	name	name
	UC San Diego Saturated Undrained soil	FluidSolidPorousMaterial	FluidSolidPorousMaterial
	Wrapper material for Initial State Analysis	InitialStateAnalysisWrapper	InitialStateAnalysisWrapper
	UC San Diego soil models	PressureDependMultiYield	PressureDependMultiYield
		PressureDependMultiYield02	PressureDependMultiYield02
		PressureIndependMultiYield	PressureIndependMultiYield
		MultiYieldSurfaceClay	MultiYieldSurfaceClay
	IUAV nD Materials Concrete Masory	Concrete	Concrete
	Contact Materials for 2d and 3d	ContactMaterial2D	ContactMaterial2D
		ContactMaterial3D	ContactMaterial3D
	custom	CustomMaterial	CustomMaterial
	Material for Modelling Concrete Walls	PlateFromPlaneStress	PlateFromPlaneStress
		PlateRebar	PlateRebar
		PlaneStressUserMaterial	PlaneStressUserMaterial
	uniaxial	Concrete Materials	Concrete01
Concrete01WithSITC			Concrete01WithSITC
Concrete02			Concrete02
Concrete04			Concrete04
Concrete06			Concrete06
Concrete07			Concrete07
ConcreteCM			ConcreteCM
ConcreteD			ConcreteD
ConcreteDamage			ConcreteDamage
ConcreteL01			ConcreteL01
ConcretewBeta			ConcretewBeta
ConcreteZ01			ConcreteZ01
ConfinedConcrete01			ConfinedConcrete01
FRPConfinedConcrete			FRPConfinedConcrete
Thermal		Concrete02Thermal	Concrete02Thermal
		ConcreteECThermal	ConcreteECThermal
		ElasticThermal	ElasticThermal
		Steel01Thermal	Steel01Thermal
		Steel02Thermal	Steel02Thermal
		SteelECThermal	SteelECThermal

STKO physical properties			OpenSees physical properties
category	subcategory	name	name
	Custom	CustomMaterial	CustomMaterial
	Steel and Reinforcing-Steel Materials	Dodd_Restrepo	Dodd_Restrepo
		Hysteretic	Hysteretic
		RambergOsgoodSteel	RambergOsgoodSteel
		ReinforcingSteel	ReinforcingSteel
		Steel01	Steel01
		Steel02	Steel02
		Steel4	Steel4
		SteelMPF	SteelMPF
		DoddRestr	DoddRestr
		UVCuniaxial	UVCuniaxial
		Steel03	Steel03
	Some Standard Uniaxial Material	Elastic	Elastic
		ElasticPP	ElasticPP
		ElasticPPGap	ElasticPPGap
		ENT	ENT
		Parallel	Parallel
		Series	Series
	ASDEASoftware	DamageTC3D	Note (2)
	Other Uniaxial Materials	AxialSp	AxialSp
		AxialSpHD	AxialSpHD
		BarSlip	BarSlip
		Bilin	Bilin
		BilinearOilDamper	BilinearOilDamper
		Bond_SP01	Bond_SP01
		BoucWen	BoucWen
		BWBN	BWBN
		Cast	Cast
		CFSSWP	CFSSWP
		CFSWSWP	CFSWSWP
		ElasticBilin	ElasticBilin
		ElasticMultiLinear	ElasticMultiLinear
		ECC01	ECC01
Fatigue		Fatigue	
Hardening		Hardening	
HyperbolicGapMaterial		HyperbolicGapMaterial	
ImpactMaterial	ImpactMaterial		
InitStrainMaterial	InitStrainMaterial		

STKO physical properties			OpenSees physical properties
category	subcategory	name	name
		InitStressMaterial	InitStressMaterial
		KikuchiAikenHDR	KikuchiAikenHDR
		KikuchiAikenLRB	KikuchiAikenLRB
		LimitState	LimitState
		MinMax	MinMax
		ModIMKPeakOriented	ModIMKPeakOriented
		ModIMKPinching	ModIMKPinching
		MultiLinear	MultiLinear
		Pinching4	Pinching4
		PinchingLimitStateMaterial	PinchingLimitStateMaterial
		PyLiq1	PyLiq1
		PySimple1	PySimple1
		QzSimple1	QzSimple1
		SAWS	SAWS
		SelfCentering	SelfCentering
		SteelZ01	SteelZ01
		TendonL01	TendonL01
		TzLiq1	TzLiq1
		TzSimple1	TzSimple1
		Viscous	Viscous
		ViscousDamper	ViscousDamper
		Bilin02	Bilin02
		ModIMKPeakOriented02	ModIMKPeakOriented02
		ModIMKPinching02	ModIMKPinching02
		PathIndependent	PathIndependent
		UniaxialJ2Plasticity	UniaxialJ2Plasticity
IMKBilin	IMKBilin		
IMKPinching	IMKPinching		
IMKPeakOriented	IMKPeakOriented		
section		Aggregator	Aggregator
		Bidirectional	Bidirectional
		Elastic	Elastic
		ElasticMembranePlateSection	ElasticMembranePlateSection
		Fiber	Fiber
		Iso2spring	Iso2spring
		LayeredShell	LayeredShell
		Parallel	Parallel
PlateFiber	PlateFiber		

STKO physical properties			OpenSees physical properties
category	subcategory	name	name
		RCSection2d	RCSection2d
		Uniaxial	Uniaxial
		WFSection2d	WFSection2d
special_purpose	Joint Material	beamColumnJointMaterial	Note (3)
		Joint2DMaterial	Note (3)
	Beam-Column	BeamSectionProperty(old)	Note (3)
		BeamSectionProperty	Note (3)
	Bearing Material	KikuchiBearingMaterial	Note (3)
		elastomericBearingMaterial	Note (3)
		FPBearingPTVMaterial	Note (3)
		TripleFrictionPendulumMaterial	Note (3)
	HingedBeam	HingedBeamPP	Note (1)
	RC Beam-Column joint Models	RCJointModel3D	Note (1)
	RC Beam-Truss joint Models	RCTrussModel2D	Note (1)
	truss	truss	Note (3)
	twoNodeLink Material	twoNodeLinkMaterial	Note (3)
	Zero-Length Material	zeroLengthMaterial	Note (3)
zeroLengthNDMaterial		Note (3)	

(3)A Special Purpose is a “container” implemented in STKO which contains more than one physical property.

MODEL BUILDER

STKO preprocessor			OpenSees Modelbuilder
category	subcategory	name	name
definitions	frictionModel	Coulomb	Coulomb
		VelDependent	VelDependent
		VelDepMultiLinear	VelDepMultiLinear
		VelNormalFrcDep	VelNormalFrcDep
		VelPressureDep	VelPressureDep
	timeSeries	Constant	Constant
		Linear	Linear
		Path	Path
		PeerMotion	PeerMotion
		PeerNGAMotion	PeerNGAMotion
		Pulse	Pulse
		Rectangular	Rectangular
		Triangle	Triangle
Trig	Trig		
Loads	eleLoad	eleLoad_beamTemp	eleLoad_beamTemp
		eleLoad_beamThermal2D	eleLoad_beamThermal2D
		eleLoad_beamThermal3D	eleLoad_beamThermal3D
		eleLoad_beamUniform	eleLoad_beamUniform
		eleLoad_shellThermal	eleLoad_shellThermal
		eleLoad_ThermalActionWrapper	eleLoad_ThermalActionWrapper
		eleLoad_ThermalWrapper	eleLoad_ThermalWrapper
	Force	EdgeCouple	Note (1)
		EdgeForce	Note (1)
		FaceCouple	Note (1)
		FaceForce	Note (1)
		ForceFromReaction	Note (1)
		NodalThermalAction	NodalThermalAction
		NodeCouple	NodeCouple
		NodeForce	NodeForce
		VolumeCouple	Note (1)
		VolumeForce	Note (1)
		FloorLoad	Note (1)
	sp	sp(prescribedNodalValue)	sp(prescribedNodalValue)
	Mass	Mass	EdgeMass
EdgeRotationalMass			Note (1)
FaceMass			Note (1)
FaceRotationalMass			Note (1)

STKO preprocessor			OpenSees Modelbuilder
category	subcategory	name	name
		NodeMass	NodeMass
		NodeRotationalMass	NodeRotationalMass
		VolumeMass	Note (1)
		VolumeRotationalMass	Note (1)
Constraints	sp	fix	fix
	mp	DistributedLK2D	Note (1)
		DistributedLK3D	Note (1)
		equalDOF	equalDOF
		rigidDiaphragm	rigidDiaphragm
		rigidLink	rigidLink
conditions	Ground_Motion	Ground_Motion	Ground_Motion
analysis_steps	Analyses	algorithm	algorithm
		AnalysesCommand	AnalysesCommand
		analysis	analysis
		analyze	analyze
		constraints	constraints
		eigen	eigen
		integrator	integrator
		loadConst	loadConst
		numberer	numberer
		system	system
	Misc_commands	customCommand	Note (4)
		domainChange	domainChange
		modelSubset	modelSubset
		nodeOnAllPartitions	Note (4)
		parameter	parameter
		rayleigh	rayleigh
		region	region
		updateParameter	updateParameter
	Patterns\addPattern	constraintPattern	constraintPattern
		loadPattern	loadPattern
		MultipleSupport	MultipleSupport
		UniformExcitation	UniformExcitation
	Patterns\removePattern	removeLoadPattern	removeLoadPattern
		removeMpConstraints	removeMpConstraints
		removeSpConstraints	removeSpConstraints
	Recorders	MPCORrecorder	Note (2)

(4) This command enables user to create custom Tcl scripts in case the user should require extra commands or it is used by STKO for internal purposes.