

CBECC-Com Input Data Model changes from 2013 ver. 3d (3995, April 2016) to ver. 3e (4372, September 2016):

The compliance engine includes a backward compatibility mechanism that automatically addresses most data model changes, where property names or enumeration strings are revised or removed as the data model evolves. This mechanism also includes logic to write messages to project logs when backward compatibility for certain properties is expected to impact compliance analysis of a previous vs. current version of the tool. Additions to the data model or changes that require user input to determine the appropriate translation of properties/enumerations from previous to a current tool version are not something that the compliance engine facilitates.

Proj	Project			
REMOVED	ExcptCondCompleteBldg	ExceptionalConditionCompleteBuilding		- now determined by ruleset based on model inputs
		default: 0		
		1: "Yes"		
		2: "No"		
	ExcptCondWtrHtrSizing	ExceptionalConditionWaterHeaterSizing		- now determined by ruleset based on model inputs
		default: 0		
		1: "Yes"		
		2: "No"		
ADDED	SimVarsFen	SimulationVariablesFenestration	Integer	- Optional input
CHANGED	GasType	GasType	Enumeration	- Required input
		default: -1		
		1: "NaturalGas"		
		2: "Propane"		
		3: "None"		
	CompType	ComplianceType	Enumeration	- Compulsory input
		default: 1 => New Complete		New Default
		9: "ExistingAddition"		Option REMOVED
		9: "ExistingAlteration"		ID switched from 10 to 9
		10: "ExistingAdditionAndAlteration"		ID switched from 11 to 10
		11: "AdditionComplete"		New Option
		12: "AdditionEnvelope"		New Option
		13: "AdditionEnvelopeAndLighting"		New Option
		14: "AdditionEnvelopeAndPartialLighting"		New Option
		15: "AdditionEnvelopeAndMechanical "		New Option
		16: "AdditionMechanical "		New Option
		17: "AdditionMechanicalAndLighting"		New Option
		18: "AdditionMechanicalAndPartialLighting"		New Option
	EscalSpdCtrlMandComp	EscalatorSpeedControlMandatoryCompliance	Enumeration	- Defaulted input
		Renamed - was EscSpdCtrlMandComp		

ConsAssm

ConstructAssembly

CHANGED

SlabInsOrientation	SlabInsulationOrientation	Enumeration	- Optional input
	11: "HorizontalAndVertical"	New Option	
SlabInsThrm1R	SlabInsulationThermalResistance	Enumeration	- Optional input
	When: ConsAssm:SlabInsOrientation = "HorizontalAndVertical"	List of New Options	
	default: 0		
	0: "R0"		
	1: "R5"		
	2: "R7_5"		
	3: "R10"		
	4: "R15"		
	5: "R20"		
	6: "R25"		
	7: "R30"		

FenCons

FenestrationConstruction

ADDED

DynamicGlz	DynamicGlazing	Integer	- Required input
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CHANGED

CertificationMthd	CertificationMethod	Enumeration	- Required input
	When: FenCons:AssmContext = 0	New List Dependencies Including FenType	
	and: FenCons:FenType = "VerticalFenestration"		
	default: 1		
	0: "- specify -"		
	When: FenCons:AssmContext = 1		
	and: FenCons:FenType = "VerticalFenestration"		
	default: 1		
	0: "- specify -"		
	1: "NFRCRated"		
	2: "DefaultPerformance"		
	When: FenCons:AssmContext = 2		
	and: FenCons:FenType = "VerticalFenestration"		
	default: 1		
	0: "- specify -"		
	2: "DefaultPerformance"		
	When: FenCons:AssmContext = 3		
	and: FenCons:FenType = "VerticalFenestration"		
	default: 1		
	0: "- specify -"		
	1: "NFRCRated"		
	2: "DefaultPerformance"		
	3: "COEquations"		
	When: FenCons:AssmContext = 0		
	and: FenCons:FenType = "Skylight"		
	default: 1		
	0: "- specify -"		
	When: FenCons:AssmContext = 1		
	and: FenCons:FenType = "Skylight"		

```

    default: 1
           0: "- specify -"
           1: "NFRCRated"
           2: "DefaultPerformance"
           3: "COEquations"
When: FenCons:AssmContext = 2
and: FenCons:FenType = "Skylight"
    default: 1
           0: "- specify -"
           2: "DefaultPerformance"
           3: "COEquations"
When: FenCons:AssmContext = 3
and: FenCons:FenType = "Skylight"
    default: 1
           0: "- specify -"
           1: "NFRCRated"
           2: "DefaultPerformance"
           3: "COEquations"

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UFactor UFactor Float Units: Btu/h-°F-ft2 Conditionally Required

Revised Range Checks: Error if not: 0 <= Value <= 2.5, Warning if not: Value <= 2.3

SpcFuncDefaults SpaceFunctionDefaults

REMOVED

HotWtrHtgRt HotWaterHeatingRate Float - Optional input

CHANGED

ResDHWSysRef ResidentialDHWSysReference ObjectRef - Optional input

was previously: RecircDHWSysRef / RecirculationDHWSysReference **assigning object of type:** RecircDHWSys

Spc Space

REMOVED

Status Status Enumeration
 OccNumSim OccupantNumberSimulated Float
 HotWtrHtgRt HotWaterHeatingRate Float
 ResLivingUnitCnt ResidentialLivingUnitCount Integer

ADDED

FxdSeat FixedSeating Integer - Defaulted input
 OccNumFxdSeat OccupantNumberFixedSeating Float - Defaulted input
 IsAtriumGT55Ft IsAtriumGreaterThan55Feet Integer - Defaulted input
 HotelMotelGuestRmCnt HotelMotelGuestRoomCount Integer - CondRequired input
 DwellingUnitTypeCnt DwellingUnitTypeCount Integer #Vals: 6 - CondRequired
 DwellingUnitTypeArea DwellingUnitTypeArea Float #Vals: 6 - CondRequired

CHANGED

ResDHWSysRef ResidentialDHWSysReference ObjectRef - CondRequired input

	6:	"SZVAVHP"		
	7:	"HV"		
	8:	"Exhaust"		
	9:	"SPVAC"	New Option	
	10:	"SPVHP"	New Option	
SubType	SubType		Enumeration	- Defaulted input
	When:	AirSys:Type = "SPVAC"	New List based on new Type above	
		default: 1		
		1: "Packaged3Phase"		
		3: "Packaged1Phase"		
	When:	AirSys:Type = "SPVHP"	New List based on new Type above	
		default: 1		
		1: "Packaged3Phase"		
		3: "Packaged1Phase"		

ZnSys ZoneSystem

REMOVED

OptStart	OptimumStart	Integer	- Optional input
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CHANGED

Type	Type	Enumeration	- Compulsory input
	default: -1		
	0: "- specify -"		
	1: "SZAC"		
	2: "SZHP"		
	3: "FPFC"		
	4: "WSHP"		
	5: "PTAC"		
	6: "PTHP"		
	7: "Baseboard"		
	8: "Exhaust"		
	9: "SPVAC"	New Option	
	10: "SPVHP"	New Option	
SubType	SubType	Enumeration	- Defaulted input
	When:	AirSys:Type = "SPVAC"	New List based on new Type above
		default: 1	
		1: "Packaged3Phase"	
		3: "Packaged1Phase"	
	When:	AirSys:Type = "SPVHP"	New List based on new Type above
		default: 1	
		1: "Packaged3Phase"	
		3: "Packaged1Phase"	

AirSeg AirSegment

CHANGED

Type	Type	Enumeration	- Compulsory input
	default: 0		
	0: "- specify -"		
	1: "Supply"		

- 2: "Return"
- 3: "Relief"
- 4: "Exhaust"
- 5: "OutdoorAir" New Option
- 6: "Connector" New Option

OACtrl OutsideAirControl

ADDED	HtRcvryRef	HeatRecoveryReference HtRcvry	ObjectRef	- Optional input
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HtRcvry HeatRecovery NEW OBJECT TYPE

ADDED	HasHXBypass	HasHeatExchangerBypass default: -1 1: "Yes" 2: "No"	Enumeration	- Defaulted input
	Type	Type default: 1 1: "Plate" 2: "Wheel"	Enumeration	- Defaulted input
	RcvryType	RecoveryType default: 1 1: "Total" 2: "SensibleOnly" 3: "LatentOnly"	Enumeration	- Defaulted input
	SupFlowRtd	SupplyFlowRated	Float	- Defaulted input
	HtgSensEff100	HeatingSensibleEffectiveness100	Float	- Defaulted input
	HtgSensEff75	HeatingSensibleEffectiveness75	Float	- Defaulted input
	HtgTotEff100	HeatingTotalEffectiveness100	Float	- Defaulted input
	HtgTotEff75	HeatingTotalEffectiveness75	Float	- Defaulted input
	HtgLatEff100	HeatingLatentEffectiveness100	Float	- Defaulted input
	HtgLatEff75	HeatingLatentEffectiveness75	Float	- Defaulted input
	ClgSensEff100	CoolingSensibleEffectiveness100	Float	- Defaulted input
	ClgSensEff75	CoolingSensibleEffectiveness75	Float	- Defaulted input
	ClgTotEff100	CoolingTotalEffectiveness100	Float	- Defaulted input
	ClgTotEff75	CoolingTotalEffectiveness75	Float	- Defaulted input
	ClgLatEff100	CoolingLatentEffectiveness100	Float	- Defaulted input
	ClgLatEff75	CoolingLatentEffectiveness75	Float	- Defaulted input
	TempCtrl	TemperatureControl default: -1 1: "None" 2: "Fixed" 3: "Scheduled"	Enumeration	- Defaulted input
	FixedSupTemp	FixedSupplyTemperature	Float	- Defaulted input
	TempSetptSchRef	TemperatureSetpointScheduleReference Sch (Sch:Type = "Temperature")	ObjectRef	- CondRequired input
	DefrostCtrl	DefrostControl default: -1	Enumeration	- Defaulted input

		1: "None"		
		2: "ExhaustAirRecirculation"		
		3: "ExhaustOnly"		
		4: "MinimumExhaustTemperature"		
DefrostCtrlTemp	DefrostControlTemperature		Float	- Defaulted input
EconoLockout	EconomizerLockout		Enumeration	- Defaulted input
	default: -1			
	1: "Yes"			
	2: "No"			
AuxPwr	AuxiliaryPower		Float	- Defaulted input

FluidSys FluidSystem

ADDED		(new plant staging inputs)		
LdRngLim	LoadRangeLimit		Integer	#Vals: 4 - Optional input
EqpList1Name	EquipmentList1Name		ObjectRef	#Vals: 10 - Optional input
	Chlr			
	Blr			
EqpList2Name	EquipmentList2Name		ObjectRef	#Vals: 10 - Optional input
	Chlr			
	Blr			
EqpList3Name	EquipmentList3Name		ObjectRef	#Vals: 10 - Optional input
	Chlr			
	Blr			
EqpList4Name	EquipmentList4Name		ObjectRef	#Vals: 10 - Optional input
	Chlr			
	Blr			

FluidSeg FluidSegment

REMOVED				
ParentFluidSysRef	ParentFluidSystemReference		ObjectRef	- Optional input
	FluidSys			

WtrHtr WaterHeater

REMOVED				
Type	Type	default: 4	Enumeration	- Required input
		0: "- specify -"		
		3: "Instantaneous"		
		4: "Storage"		
OffCycleFuelSrc	OffCycleFuelSource	default: 0	Enumeration	- Optional input
		0: "- specify -"		
		1: "Electricity"		
		2: "Gas"		
OffCyclePrstcLoss	OffCycleParasiticLosses		Float	- Optional input
OnCycleFuelSrc	OnCycleFuelSource		Enumeration	- Optional input

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                                default: 0
                                0: "- specify -"
                                1: "Electricity"
                                2: "Gas"
OnCyclePrstcLoss      OnCycleParasiticLosses      Float      - Optional input
TankOffCycleLossCoef TankOffCycleLossCoef      Float      - Optional input
PilotEnergy           PilotEnergy                 Integer     - Optional input

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CHANGED

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EF                    EF                    Float      - CondRequired input

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ResDHWSys ResidentialDHWSystem Was previously: RecircDHWSys / RecirculationDHWSystem

ADDED

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PumpBHP              PumpBrakeHorsepower      Float      - CondRequired input
LpPipeInsThkns      LoopPipeInsulationThickness Float      - Required input
SuppStorTankVol     SupplementalStorageTankVolume Float      - Optional input

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REMOVED

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LivingUnitCnt       LivingUnitCount          Integer     - Optional input
UseDefaultLps       UseDefaultLoops          Integer     - Optional input
PipeType            PipeType                 Float      #Vals: 6 - Optional input
PipeLen             PipeLength               Float      #Vals: 6 - Optional input
PipeDia             PipeDiameter              Float      #Vals: 6 - Optional input
PipeExtraIns        PipeExtraInsulation      Integer     - Optional input

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CHANGED

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Type                Type                Enumeration - Required input

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When: ResDHWSys:CentralSys = 1      Separate List specific to Central Systems
    default: 3840
    0: "- specify -"
    3840: "Standard"
    4096: "Pipe Insulation, All Lines"
    8392704: "(HERS req'd) Pipe Insulation, All Lines"

```

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else:
    default: 3840
    0: "- specify -"
    3840: "Standard"
    4096: "Pipe Insulation, All Lines"
    4608: "Parallel Piping"
    4992: "Recirculation, Non-Demand Control"
    5248: "Recirculation, Demand Control Push Button"
    5504: "Recirculation, Demand Control Occupancy/Motion"
    8392704: "(HERS req'd) Pipe Insulation, All Lines"
    8393216: "(HERS req'd) Parallel Piping"
    8393856: "(HERS req'd) Recirculation, Demand Control Push Button"
    8394112: "(HERS req'd) Recirculation, Demand Control Occupancy/Motion"
    8394240: "(HERS req'd) Point of Use"
    8394496: "(HERS req'd) Compact Distribution System"
    4352: "Insulated and Protected Pipe Below Grade"
    8393600: "(HERS req'd) Recirculation, Non-Demand Control"

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Option REMOVED

Option REMOVED

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DistType            DistributionType      Enumeration - CondRequired input

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        default: 0
        0: "No loops or central system pump"
        5056: "No Control (continuous pumping)"
        6336: "Demand Control (Standard Design for new construction)"
        6592: "Temperature modulation"
        6848: "Temperature modulation and monitoring"
BaseResWtrHtrRef      BaselineResidentialWaterHeaterReference      ObjectRef      - Optional input
ResWtrHtr
PipeLctn              Was previously: BaseRecircWtrHtrRef / BaselineRecirculationWaterHeaterReference assigning: RecircWtrHtr
                    PipeLocation
                    default: 0
                    0: "Conditioned"
                    1: "Semi-Conditioned"
                    2: "Unconditioned"
                    3: "Underground"
LpCnt                 LoopCount
                    Integer
                    - CondRequired input
    
```

ResWtrHtr ResidentialWaterHeater Was previously: RecircWtrHtr / RecirculationWaterHeater

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ADDED
HtPumpWtrHtrNEEA     HeatPumpWaterHeaterNEEA      Integer      - Optional input
AirSrcHtPumpType     AirSourceHeatPumpType        Enumeration   - Optional input
                    default: 0
                    0: "- select HPWH type -"
                    11: "AO Smith PHPT 60"
                    12: "AO Smith PHPT 80"
                    13: "AO Smith HPTU 50"
                    14: "AO Smith HPTU 66"
                    15: "AO Smith HPTU 80"
                    19: "GE2014 50"
                    23: "GE2014 80"
                    21: "Rheem HB 50"
                    22: "Stiebel 220E"
TankZn                TankZone                      Enumeration   - Optional input
                    default: 3
                    0: "Conditioned"
                    1: "Unconditioned"
                    2: "Outside or in Exterior Closet"
InpRatingElec         InputRatingElectric           Integer      - Optional input
ElecMiniTank          ElectricMiniTank              Integer      - Optional input
ElecMiniTankPwr       ElectricMiniTankPower         Float        - Optional input

REMOVED
TankType              TankType                      Enumeration   - Optional input
                    default: 6
                    0: "Boiler"
                    1: "Indirect"
                    2: "Large Instantaneous"
                    3: "Large Storage"
                    2: "Large Tankless"
                    5: "Small Instantaneous"
    
```

6: "Small Storage"
5: "Small Tankless"

CHANGED

TankCat

TankCategory
When: ResWtrHtr:ElementType = "Electric Resistance"
default: 3
2: "Instantaneous"
3: "Storage"
When: ResWtrHtr:ElementType = "Heat Pump"
default: 3
3: "Storage"
else:
default: 3
0: "Boiler"
1: "Indirect"
2: "Instantaneous"
3: "Storage"

Enumeration - Optional input
Now Separate Lists based on ElementType