EPZ

EPZ ZONES		KEY ACTION
Zone 1	Intake Zone	for introducing the material into the extruder.
Zone 2	Melting Zone	for heating the material and therefore melting the material and achieve partial or total mixing.
Zone 3	Venting Zone	for removing the volatiles & moisture.
Zone 4	Mixing Zone	for ensuring proper mixing.
Zone 5	Vacuum Zone	for completely removing the volatiles & moisture to the required levels.
Zone 6	Metering Zone	for building up the required pressure at the die.

TABLE OF INTAKE ZONE

TABLE OF INTAKE ZONE ELEMENTS					
ELEMENTS		CHARACTERISTICS			POTENTIAL USE
NOMENCLATURE	GEOMETRY & PROFILES	CONVEYING EFFICIENCY	FREE VOLUME	TENDENCY TO BREAKUP AND COMPACT	
Single Flight 'V' Element		Highest	Medium	Medium	All Types
Forward Screw Element		Low	Medium	Medium	Pellets
Deep Flight Schubkanten		Low	Highest	Medium	Tri-lobed Force-fed Extruders
Schubkanten Element		High	High	High	Powders, Mix of Powders and Granules
Special Schubkanten Element		Low	Highest	Medium	Bi-lobed Force-fed Extruders
Single Flight Elements		Medium	Low	Low	Alloys & Blends with different melt characterization

TABLE OF MELTING ZONE

TABLE OF MELTING ZONE ELEMENTS						
ELEMENTS		CHARACTERISTICS				POTENTIAL USE
NOMENCLATURE	GEOMETRY & PROFILES	MELTING ABILITY		DISPERSIVE MIXING ABILITY	SHEAR UNIFORMITY	
		AMORPHOUS	CRYSTALLINE			
Fractional Kneading Element		Highest	Highest	Highest	High	All types of Melting and Dispersive Mixing
Forward Kneading Element		Low	Medium	Low	Medium	Easy to Melt Crystalline Material
Reverse Kneading Element		Medium	High	Medium	Medium	Crystalline Material
3KB Kneading Elements		High	Highest	High	Medium	Amorphous
Neutral Kneading Elements		Medium	High	High	Low	Not usually recommended for Melting Used for Mixing

Reference:

www.exturderprocessingzone.com
www.extrudertimes.com

TABLE OF MIXING ZONE

TABLE OF MIXING ZONE ELEMENTS							
		CHARACTERISTICS					POTENTIAL USE
ELEMENTS	GEOMETRY & PROFILES	UNIFORMITY IN SHEAR	ELONGATIONAL MIXING ABILITY	DISPERSIVE NATURE	CLEANING ACTION	WETTING ACTION	
Fractional Kneading Elements		High	Highest	High	High	Highest	Kneading of highly filled materials with Talc, Mica
Forward Kneading Elements		Medium	Low	Low	Highest	Low	General purpose mixing requirement
Reverse Kneading Elements		Medium	Low	Medium	Medium	Medium	Kneading under Compression
Neutral Kneading Elements		Low	Low	Highest	Low	Medium	Intense localised shear or dispersion of agglomerated Pigments
3KB Kneading Elements		High	Medium	Medium	High	High	A better substitute of RKB for general Purpose Mixing Requirement
Screw Mixing Elements		High	Low	Low	Low	Low	Use for Fiber dispersion with reduced attrition
Toothed Block		Medium	Medium	High	Low	Medium	Used for distributive Mixing in shallow flighted extruders
Special Tooth Mixing Elements		High	High	High	Low	High	Used for high stirring action while blending two or three different polymers
CME: * Erdmenger Type		Highest	Medium	Medium	Low	High	Generally with high clearances between elements, effective in introducing uniform high intensity shear action
FME - Fractional Mixing Elements		Highest	Highest	High	High	Highest	

*CME: Continuous Mixing Elements